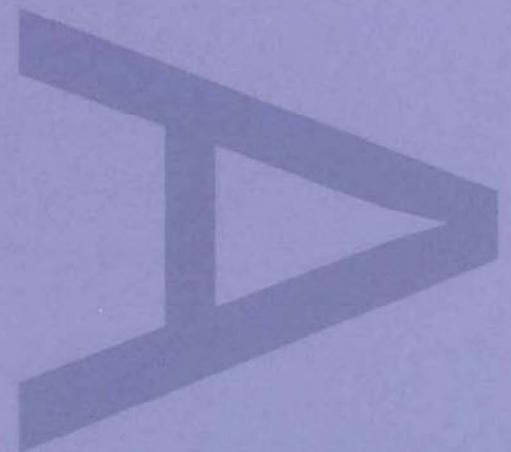
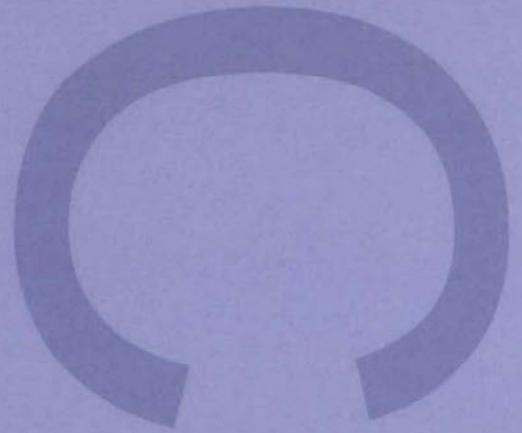
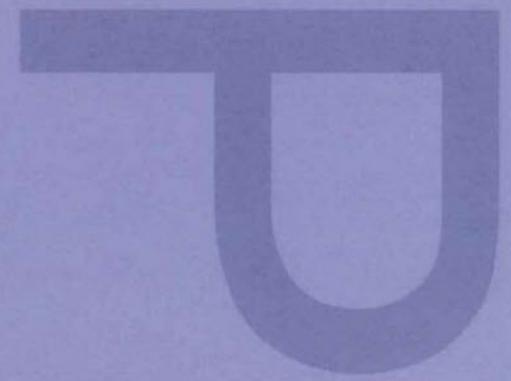


An Assessment of Archaeological Investigations at 169 Tower Bridge Rd

**Site Codes: TWG00, TBI01, TWO01,
TBA03 and TBB03**

September 2009

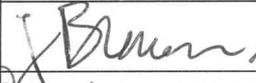
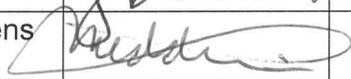


PRE-CONSTRUCT ARCHAEOLOGY

DOCUMENT VERIFICATION

An Assessment of an Archaeological Excavation and Watching Brief
at 169 Tower Bridge Rd, London SE1

Quality Control

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Revision No.	Date	Checked	Approved

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**An Assessment of an Archaeological Excavation and Watching Brief at 169
Tower Bridge Rd, London SE1**

Site Codes: TWG00, TBI01, TWO01, TBA03 and TBB03

Central National Grid Reference: TQ 33435 79725

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September 2009**

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1 ABSTRACT

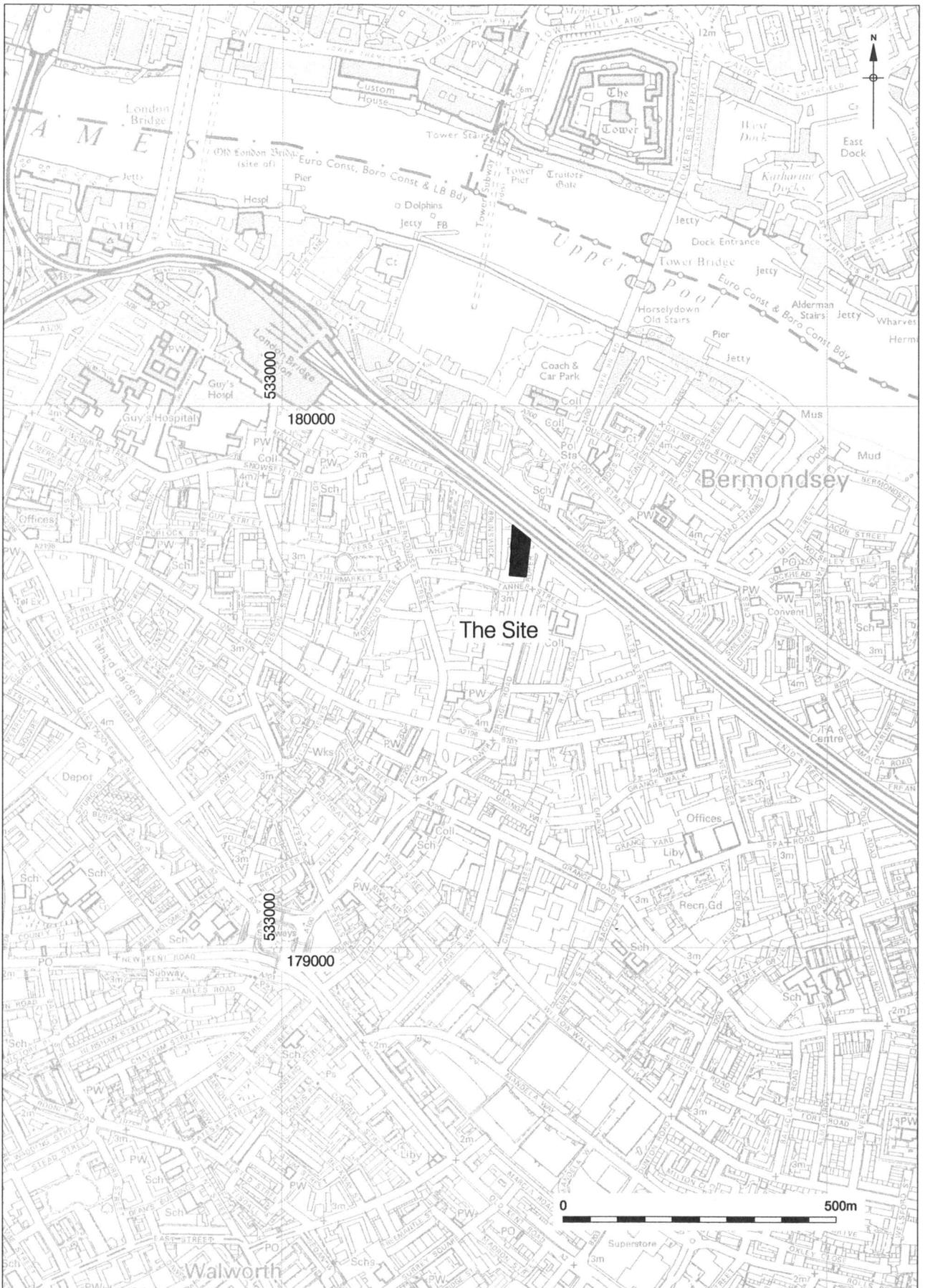
- 1.1 This report details the results and working methods of a programme of archaeological investigations undertaken by Pre-Construct Archaeology Ltd. at the former Sarson's vinegar factory, 169 Tower Bridge Road, London Borough of Southwark. The site Central National Grid Reference is TQ 33435 79725. The work was commissioned by Sunlight Projects Ltd.
- 1.2 The work was carried out over a number of phases between August 2000 and October 2004, and revealed evidence of past activity from as early as the Mesolithic, through the later prehistoric period, with also limited evidence of a Roman presence. There was then a gap in observable activity, caused by rising water levels and the site becoming inundated. Archaeological deposits dating from the early post-medieval period up to the 20th century were recorded, the area having been reclaimed during the late medieval/early post-medieval period.
- 1.3 The earliest features on the site appear to have been a number of stakeholes, along with pits and ditches, probably dated to the Neolithic period. Towards the southern half of the site numerous ard marks were recorded and probably represented tilling of the soil in the later Neolithic and Bronze Age. Apparently contemporary with the ard marks were numerous stakeholes, though it was not possible to identify any positive structures from these. Two large, possible cooking pits were also observed at this level.
- 1.4 These earlier prehistoric features were sealed by a layer of sand, which covered the whole site and had been disturbed by later activity. A number of features were cut into the surface of the sand horizon and represented one or more later prehistoric phases. A Roman ditch was also cut along the line of a Neolithic channel and was itself recut. Following this limited Roman activity, the site became inundated by the rising waters of the Thames and a thick layer of alluvium was deposited over the earlier levels.
- 1.5 The site was re-occupied again in the post-medieval period, following reclamation of the surrounding area. The earliest features cut into the alluvium were a series of postholes, representing a possible fence line and a number of features interpreted as drainage ditches, and probably elements of an early reclamation scheme. From the 18th century the site became dominated by elements of the leather industry. A number of tanning pits and associated structures were recorded across the site. There was also evidence that the related process of tawing was carried out on the site.

- 1.6 In addition to the abundant evidence of industrial activity a number of other features suggested the presence of both timber framed and masonry buildings on the site. These related to structures contemporary with both the leather industry and vinegar manufacture, which were carried out on the site from 1814 until the later 20th century.
- 1.7 The results of the excavation are of local and possibly regional importance. The prehistoric evidence, the ard marks in particular, are important as they add to a small but growing body of evidence for prehistoric agricultural activity in this area immediately south of the Thames. Well-preserved ard marks have only been recorded at a handful of other sites in London. The evidence for the tanning industry is important, for although this has been recorded at numerous other sites in the vicinity, the extensive evidence at 169 Tower Bridge Road has permitted a greater understanding of the scale and range of processes associated with the industry. This report will make recommendations regarding the nature of further works in light of these important elements.

2 INTRODUCTION

- 2.1 Between 7th August 2000 and 7th October 2004 Pre-Construct Archaeology Ltd. carried out a series of archaeological investigations at the former Sarson's vinegar factory, 169 Tower Bridge Road, London Borough of Southwark. The programme of works comprised an initial evaluation (Hall 2000) followed by further phases of evaluation, excavation and watching briefs.
- 2.2 The site covers an approximately rectangular area directly south of the mainline railway operating in and out of London Bridge Station, and to the northwest of the Junction of Tower Bridge Road, Roper Lane and Tanner Street. A number of buildings associated with the vinegar factory were present prior to the commencement of archaeological investigations, though some were demolished during the course of the investigations.
- 2.3 The site is bounded by Tanner Street to the south, Brunswick Court to the west, a railway viaduct, including business units in the arches to the north, and Roper Lane to the east (Fig. 1). In total it covers approximately 4800 m², with archaeological investigations conducted over an area of approximately 1700m² (Fig. 2). The central National Grid Reference for the investigation is TQ 33435 79725.
- 2.4 The investigations were conducted prior to and during redevelopment of the site for residential use. The work was carried out in accordance with Department of the Environment, Planning and Policy Guidance Note 16 (PPG16) and the Southwark Plan. It was carried out as part of an archaeological condition placed on the planning consent for the development.
- 2.5 Because the site lies within the Archaeological Priority Zone (APZ) of Borough/ Bermondsey/Riverside as defined in the Southwark Plan, and because of the archaeological potential of the site, archaeological conditions were attached to the granting of planning permission for the various phases of development. Specifications for the different phases of archaeological work were prepared by Pre-Construct Archaeology Ltd. (PCA 2000, 2002a, 2002b, Brown 2001a, 2001b, 2003, Divers 2003, Leary 2004), which conformed to recognised archaeological standards (English Heritage 1991a, GLAAS 1998, IFA 1999a-c, Museum of London 1999, Museum and Galleries Commission 1992, Society of Museum Archaeologists 1993, UKIC 1983) and were approved by the Borough's Archaeological Officers.

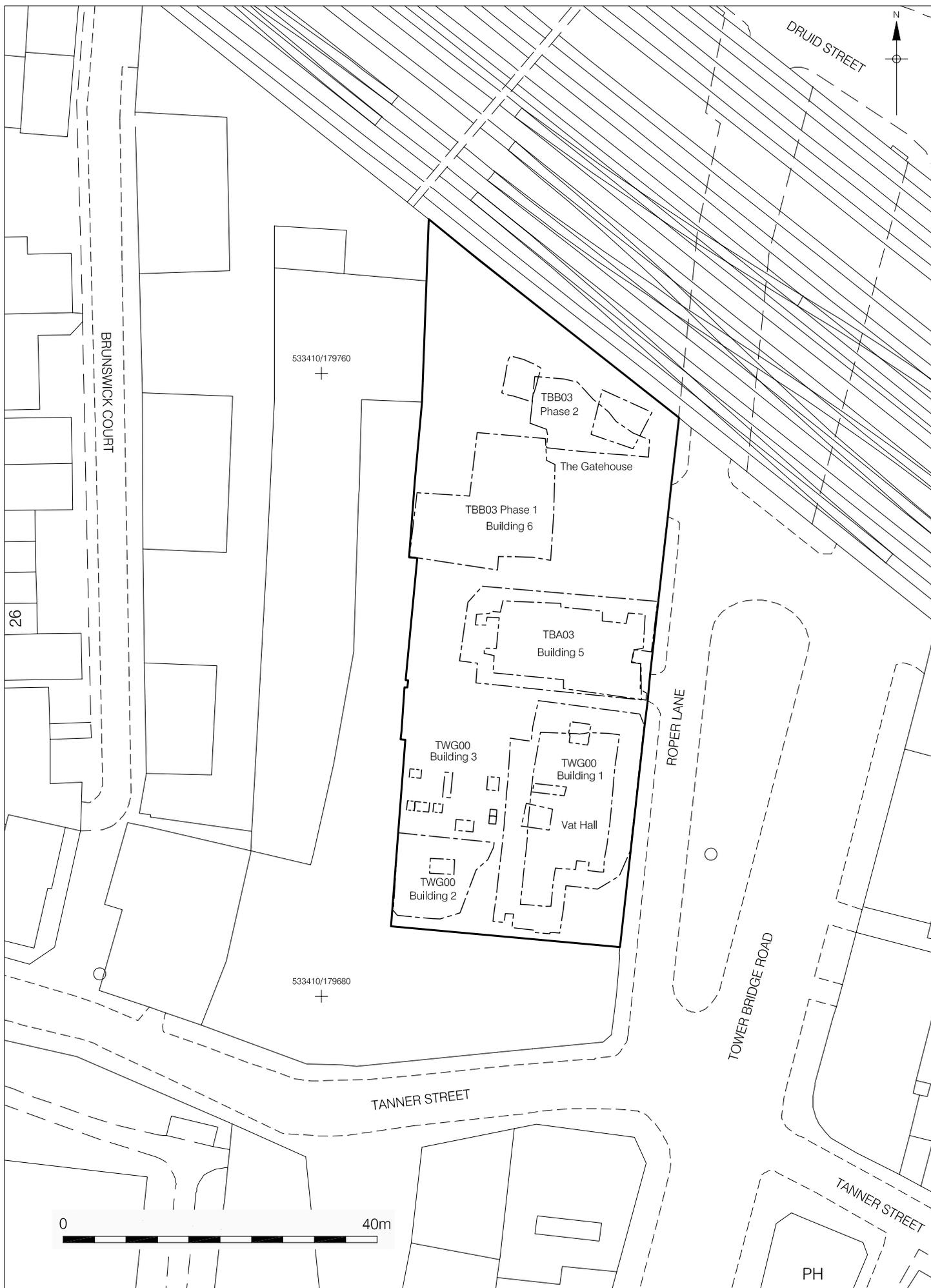
- 2.6 The commissioning client was Sunlight Projects Ltd. The work was undertaken by Pre-Construct Archaeology Ltd. under the supervision of Chris Pickard, Cassian Hall and Tim Bradley and the Project Management of Gary Brown, David Divers and Jim Leary. Frank Meddens managed the post-excavation work.
- 2.6 The first phase of work involved the excavation of four evaluation trenches; two near the northern edge of the site and two further south, closer to the site's eastern boundary (Hall 2000). The second phase comprised a single evaluation trench within the footprint of Building 2, located in a south-central area of the site (Bradley 2001). This was followed by the archaeological monitoring and recording (watching brief) of a number of underpinning trenches directly to the north in Building 3 and open area excavation in the area of the two original evaluation trenches to the east, within the footprint of the former Vat Hall (Building 1) (Pickard 2002a). During this phase a wider area around the second phase evaluation trench was also subject to a watching brief (Pickard 2002b). The fourth phase involved open area excavation to the north of Building 1, in the footprint of Building 5. The fifth phase involved open area excavation of an 'L-shaped' area to the north of this (Building 6) and was followed by the final phase; excavation of a sub-triangular area north of this and in the vicinity of the original two northern evaluation trenches (The Gatehouse). The locations of the different phases of work are illustrated in Figure 3.
- 2.8 The completed archives comprising written, drawn, photographic and electronic records and artefactual material will be deposited with the London Archaeological Archive and Research Centre (LAARC) under the site codes TWG00, TBI01, TWO01, TBA03 and TBB03.

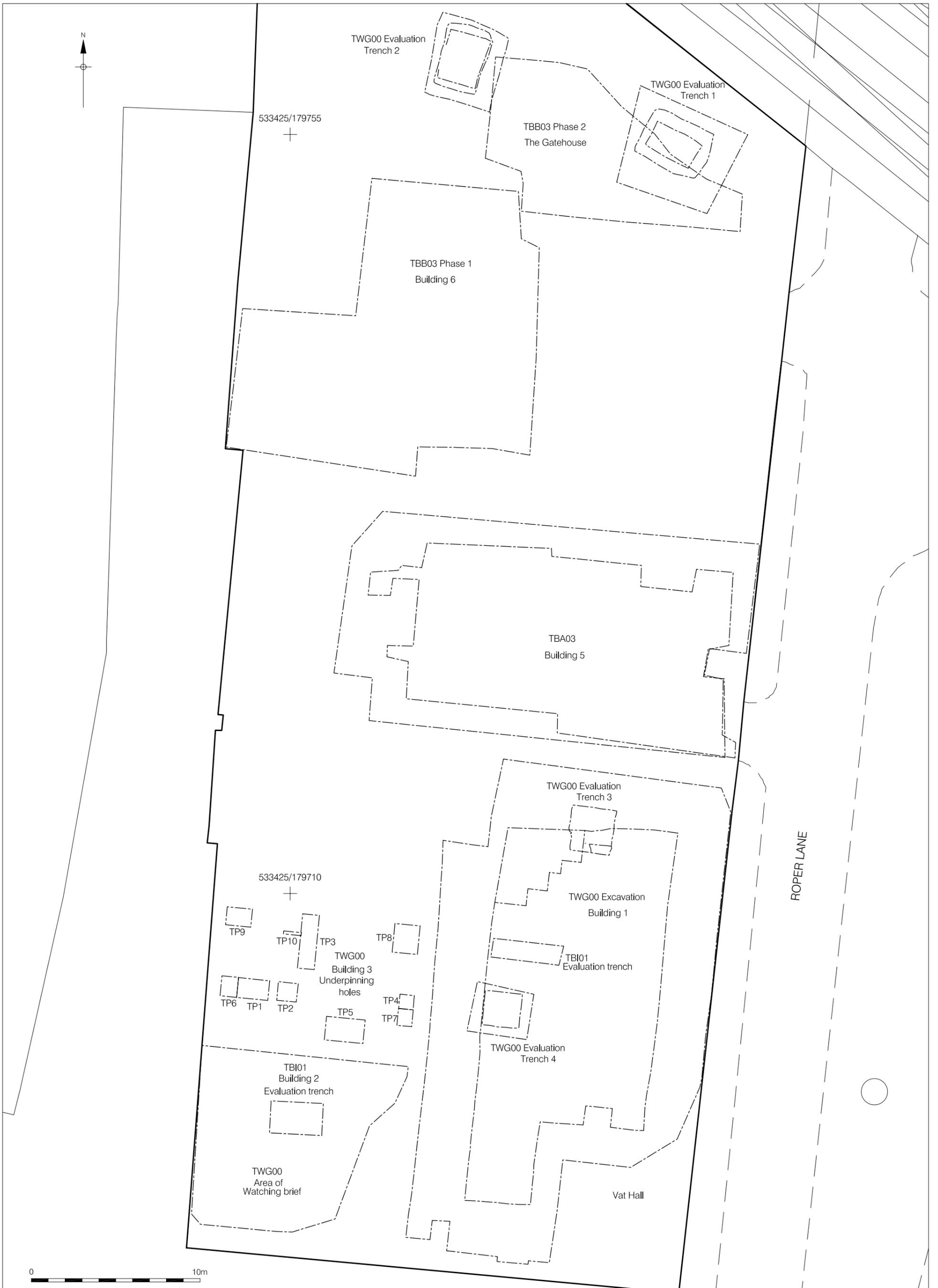


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Figure 1
 Site Location
 1:10,000 at A4





3 PLANNING BACKGROUND

- 3.1 Work on the site was carried out as part of an archaeological condition placed on the planning consent for the development, and was conducted in line with the Department of the Environment Planning Policy Guidance Note 16 (PPG16).
- 3.2 The site is located within the Archaeological Priority Zone of Borough/Bermondsey/Riverside as defined in the Southwark Plan, formerly the London Borough of Southwark Unitary Development Plan (UDP), adopted in July 1995. The Plan contains the following policies relating to archaeology:

OBJECTIVE E.5:

TO ENSURE THE PRESERVATION, PROTECTION, INVESTIGATION, RECORDING AND DISPLAY OF THE ARCHAEOLOGICAL HERITAGE

POLICY E.5.1:

The Council will seek to conserve and protect the borough's archaeological heritage and to enhance the knowledge of its historical development. The policy will apply to sites of potential archaeological importance, where ancient remains are threatened by development.

- (i) The Council will expect the applicant to provide information to enable an assessment of the impact of a proposed development on the potential archaeology of the site. This would usually be desk-based information and would be expected prior to the determination of a planning application.***
- (ii) Where there are likely to be important remains on a site, which may merit preservation in situ, then the results of an archaeological field evaluation will, if feasible, be required prior to the determination of a planning application.***
- (iii) Where the evaluation reveals important remains their protection and preservation will be the primary objective. This can be achieved by redesigning the proposed development and by foundation modification.***
- (iv) Where important archaeological remains cannot be preserved, or where remains do not merit preservation, then the Council will use planning conditions to ensure excavation and recording of the remains prior to redevelopment, i.e. preservation by record.***
- (v) Archaeological investigations are to be undertaken by a recognised archaeological field unit to a written specification. These will need to be approved by the Council prior to commencement of any work.***

- 3.4 A number of local and national research policies relevant to the investigations at 169 Tower Bridge Road have been identified by English Heritage (1991b). A number of research priorities for archaeology in Greater London (Nixon *et al.* 2003) are also pertinent to the site.
- 3.4 Prior to the development, the site was occupied by buildings of the former vinegar works along with areas of hard standing. Demolition of some of the buildings was carried out prior to, during and between the different phases of archaeological investigations.
- 3.5 The proposed development consists of the construction of a number of residential properties along the eastern half of the site. This involved the retention of the shells of some existing buildings and extensive new build. There were also proposals for underground car parks associated with the properties.
- 3.6 It was believed that 18th to 20th century development of the site was likely to have had a severe archaeological impact through:
- Ground reduction and levelling for the construction of buildings associated with the tanning and vinegar industries.
 - The cutting of footings within building footprints and service runs within buildings and across the site.
 - Cutting of external features associated with the industries on the site
- 3.7 Prior to the 18th century, truncation of archaeological deposits was likely to have related to natural drainage channel development and early attempts at land reclamation through the excavation of various drainage features.
- 3.8 The redevelopment could potentially have a significant and widespread archaeological impact through;
- Deep excavation for the underground car parks.
 - Grubbing out of existing footings and services.
 - The cutting of footings and/or piling within new building footprints and service runs within buildings across the site.
- 3.9 The archaeological work was carried out in consultation with Kim Stabler and Sarah Gibson, Archaeological Officers for Southwark Borough Council, who also inspected and monitored the project.

4 GEOLOGY AND TOPOGRAPHY

- 4.1 The solid geology of the area comprises Eocene London Clay overlain by floodplain sands and gravels of Pleistocene date. These were deposited by the relatively fast-flowing Thames towards the end of the Devensian cold stage. Due to the braided channel nature of the river the valley floor comprised a series of upstanding sand and gravel bars, interspersed with stream channels (Ridgeway 2003, 104). In the Bermondsey area a series of late glacial sandy eyots were formed, indeed 169 Tower Bridge is located on the southern side of the Horselydown Eyot.
- 4.2 Because of the mechanisms by which the underlying topography was formed there are a number of variations in the upper elevations of the natural sand and gravel deposits in the area of the study site. At Brunswick Court, directly to the west natural sand and gravel were recorded at an upper elevation of between 0.0m OD and +0.2m OD (Carew 1997, 8), whereas at Vinegar Yard, directly to the south of the site, the upper level of the sand lay at +0.66m OD (Ridgeway 2003, 105). A little further to the south at 167 Tower Bridge Road the upper level of the sand lay at -0.33m OD (Parsons and Proctor 2000), but to the east of this at 49-51 Tanner Street an upper elevation of +0.43m OD was recorded (Douglas and Ridgeway 2000). Further to the south, excavations at 36-40 Tanner Street and 159-161 Tower Bridge Road recorded an upper elevation of natural deposits at -0.46m OD (Elsden 2001, 276). Even further south, upper elevations of natural sand have been recorded between -1.86 and -2.08m OD at 157 Tower Bridge Road (Hawkins 2005) and at -2.11m OD at 175 Bermondsey Street (Cuthbertson 2000).
- 4.3 The general pattern of upper elevations of the natural declining to the south broadly reflects the southern, downward slope of the eyot and a channel to the south, separating it from the more southerly Bermondsey Eyot. The more enigmatic levels probably represent channels towards the edge of the Horselydown Eyot. To the north, levels increase to in excess of +1.5m OD (Ridgeway 2003, Fig. 3) before declining down the northern slope of the eyot, e.g. +0.39m OD at Lafone Street (Bates and Minkin 1999) and +0.18m OD at Three Oak Lane (Proctor and Bishop 2002).
- 4.4 At the beginning of the Holocene, following rises in mean water level, the now, more gently-flowing Thames began to deposit fine alluvium over the earlier, coarser deposits and effectively buried these deposits at the edges of the eyots. Subsequently, pockets of peat developed in more marginal areas between the Neolithic and the Iron Age, during

periods of water level regression, but towards the end of the late prehistoric period and into the early historic period, rising sea levels led to the deposition of estuarine silts and clays over large areas of the eyots, sealing all earlier deposits. This sequence of natural phenomena clearly has implications for archaeological preservation in the area, as according to location, sites of different dates will have been buried under differing natural deposits.

- 4.5 The current topography of the study site has clearly been influenced by recent urban development but a surface slope downwards from north to south is visible. A surface level of +3.43m OD was recorded towards the northern edge of the site, with a level of +2.08m OD being recorded to the south. The site now lies in excess of 400m south of the Thames.

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

5.1 INTRODUCTION

5.1.1 169 Tower Bridge Road lies in an area of London, south of the Thames, which has witnessed much redevelopment in recent years. Consequently, there have been numerous archaeological interventions in the surrounding area, some in the immediate vicinity of the site. It has thus already been possible to gain quite a detailed understanding of past activity on and around the area occupied by the Horselydown Eyot. Evidence of activity has been recorded from the Mesolithic through to the Iron Age, and again during the post-medieval period, when much of the local area was dominated by the tanning and tawing industries. Published summaries of the archaeological and environmental background of the locality include Drummond-Murray *et al.* (1994), Sidell *et al.* (2000), Sidell *et al.* (2002) and Ridgeway (2003).

5.2 PREHISTORIC

5.2.1 Until relatively recently the prehistory of the area surrounding the study site was little evidenced and poorly understood. Prior to the 1970s archaeological excavations in the vicinity had tended to ignore underlying alluvial deposits which were dismissed as natural. However, with the increase in development since the early 1970s and the consequent increase in the number of archaeological interventions, there has been a much greater understanding of the prehistoric topography and archaeology of the area. The sandy eyots and the peat and alluvial deposits, which overlie them, are now better understood and it has become clear that archaeological horizons exist between the different deposits. It has also become clear that the stratigraphy of these deposits across the area can be quite complex, with a number of temporal and spatial variations in deposition being evident. There is now evidence for elements of the surrounding landscape being utilised from the Mesolithic to the Iron Age.

5.2.2 Mesolithic material has been recorded from sites on the northern slopes of the Horselydown Eyot. Three sites within 300m northeast of the study site; 1-2 Three Oak Lane (TKL99), 10-16 Lafone Street (LAF96) and 241-247 Tooley Street (TLS95) have produced worked lithics exhibiting a Mesolithic technology. A little further to the east, Mesolithic flints were also recovered at 283 Tooley Street (Saxby 1994), and a short distance to the southeast of this, flints exhibiting Mesolithic or Early Neolithic characteristics were identified at 285-291 Tooley Street (TLT00). A little over 400m to the southwest, residual Mesolithic material was identified at 217-219 Long Lane (LLW03) in deposits overlying the Bermondsey Eyot.

- 5.2.3 There is also evidence for Neolithic activity on the north side of Horselydown Eyot. The excavations at Lafone Street recorded a number of ard marks cut into the natural sand which extended over an area of at least 7m by 2m (Bates and Minkin 1999). They comprised a series of approximately north-south aligned grooves and appeared to have been contemporary with a group of four stakeholes located to the north. Both groups of features were sealed by ploughsoil, up to 0.2m thick, which covered the site, and from which burnt and struck flint were recovered. Further ard marks were found at Wolseley Street, some 500m east of the study site (Drummond-Murray 1994). Late Neolithic activity was also recorded at Three Oak Lane, and a little further to the east, worked flints of Neolithic date were found in weathered natural sand at Queen Elizabeth Street (McDonald 1988).
- 5.2.4 At both Lafone Street and Three Oak Lane, activity continued into the Bronze Age. The ploughsoil that sealed the Neolithic features at Lafone Street produced a radiocarbon date of 1520 – 1220 Cal BC. At Three Oak Lane a number of features containing burnt and struck flint, along with quantities of daub, were dated to the Neolithic and Bronze Age. A north-south aligned, fragmented ditch also contained an oak ard tip, which appears to have been Late Bronze Age, or perhaps earlier. A radiocarbon date of 1030 – 785 Cal BC on peat, which sealed the ditch provides a *terminus ante quem* for the ard (Proctor and Bishop 2002). Five prehistoric ditches in total were recorded on the site, along with numerous postholes. All of the features were sealed by the peat deposit, which was identified at levels of between +0.48 and +0.20m OD. This in turn was overlain by an alluvial deposit, at between +0.52 and +0.38m OD.
- 5.2.5 At Brunswick Court, immediately to the west of the study site, a prehistoric occupation horizon was found above the natural sand and gravel. The upper elevation of this horizon lay between +0.55 and +0.75m OD and it contained a small number of ceramic fragments, along with burnt and struck flint (Carew 1997, 8). At Vinegar Yard, 33 Tanner Street, immediately to the south of the site, alluvial silty sand was seen within a post-glacial channel (Heard 2000, 137). An oval pit had been dug into the deposit. The backfill of the pit contained abundant fragments of burnt flint and charcoal flecks, which became more concentrated towards the base of the feature. Although lacking firm dating evidence, the feature was interpreted as a Bronze Age cooking pit. Further interpretation of the site stratigraphy suggested that subsequent fluvial action had created a wide basin or channel, the upper fill of which, was a greyish brown silt deposit, up to 0.20m thick and containing burnt flint and charcoal. This was sealed by peat deposits recorded at an

- upper elevation of +0.47m OD to the east and +0.02m OD to the west. Two phases of peat formation were recorded, the earlier producing a radiocarbon date of 980 – 805 Cal BC and the latter dating to 780 – 395 Cal BC. The sequence was sealed by up to 0.7m of sterile silts and clays, deposited during a later phase of marine transgression.
- 5.2.6 To the southeast, a prehistoric ditch and possible posthole were recorded in association with a sandy soil horizon at 49-51 Tanner Street (Douglas and Ridgeway 2000). The soil contained burnt and struck flint and overlay the sandy surface of the eyot. It was sealed by alluvium, peat and further deep alluvial deposits.
- 5.2.7 To the south of the study site, excavations at 36-40 Tanner Street and 159-161 Tower Bridge Road uncovered peat formations overlying fluvial sands which dated to the Bronze Age. The peat in turn was overlain by alluvial silts (Elsden 2001). Further south, and presumably beyond the eyot, as no sandy island deposits were recorded, peats and alluvial deposits were recorded at 151 Tower Bridge Road (Taylor-Wilson 1999). These probably filled a large palaeochannel between the Horselydown and Bermondsey Eyots.
- 5.2.8 In addition to those mentioned above, evidence of peat formation has been recorded at a number of other sites in the area and has mostly been dated to the Bronze Age. At each site, at least one phase of peat formation has been identified. This has often been equated with the Tilbury IV marine regression of the late 2nd millennium BC (Devoy 1979, Haggart 1995). The peat deposits are located at the eyot margins. At the northern edge of Horselydown Eyot a layer of peat was found between two transgression episodes at 54 Gainsford Street (GFS93). To the west of the study site a similar sequence was recorded at 4-42 Brunswick Court and 12-16 White's Grounds (Watson 1994). On the southwestern edge of the eyot, and south of the study site similar deposits were recorded at 168 Tower Bridge Road (TBO00). Further to the southwest, peat has been recorded at a number of sites located on the northern edge of the Bermondsey Eyot. Sites at 8 Tyers Gate (TYG99), 9 Leathermarket Street (NLS94), 171 Bermondsey Street (BYG02), 6-8 Morocco Street (MRC90) and 211 Long Lane (LGM02/LMO02) all contained peat deposits sandwiched between finer sediments representing earlier and later inundations, presumably the Thames III (earlier) and Thames IV (later) transgressions (e.g. Wessex Archaeology 2002, Table 2). Similar sequences were also recorded at 157 Tower Bridge Road, some 200m south (Hawkins 2005).
- 5.2.9 There is less evidence of Iron Age activity, probably because rising water levels associated with the Thames IV transgression had rendered lower-lying areas

uninhabitable. However, a small number of Iron Age features and finds have been found. These all come from sites on Tooley Street, on the northern flanks of Horselydown Eyot. A ditch, pits and stakeholes recorded at 255 Tooley Street (TYS00) may be of Late Iron Age or possible early Roman date. Residual Iron Age pottery was recovered from later silt deposits at 283 Tooley Street, and a gully and shallow pit at 285-291 Tooley Street have also been interpreted as Iron Age features.

5.3 ROMAN

- 5.3.1 The study site is located some distance to the southeast of the main centre of Roman occupation in Southwark, which was focussed on the bridge head at Borough High Street and the surrounding neighbourhood. However, some evidence for activity in the Roman period has been recorded closer by. The evidence comes mostly from the slopes of the eyots, areas between the sand islands being deep channels by this period.
- 5.3.2 A number of sites on the northern slopes of Horselydown Eyot have produced features and finds of Roman date. At Queen Elizabeth Street a NE-SW aligned Roman drainage ditch crossed the site. A number of features dating to the early Roman period were also recorded at 255 Tooley Street, and at 283 Tooley Street, pits postholes, stakeholes and a ditch contained Roman pottery. Roman pottery was also recovered from alluvial deposits at 241-247 Tooley Street. Closer to the study site, a posthole and ditch at Brunswick Court were possibly of Roman date and at Vinegar Yard, residual Roman pottery was recovered from alluvial silt deposits.
- 5.3.3 To the south and southwest of the study site, further Roman deposits are recorded at sites closer to the edge of the Bermondsey Eyot. Some 300m south of the site, two pits containing Roman pottery were recorded in the Long Walk/Tower Bridge Road/Grange Walk area (LWK92). Further to the southwest, a number of features, including at least one inhumation burial have been dated to the Roman period, at The Trocette, on the junction of Tower Bridge Road and Bermondsey Street. Possible Roman roadside ditches have been recorded at 211 Long Lane and Roman pottery was recovered from alluvial deposits at 9 Leathermarket Street. Sites on and around Bermondsey Square, similarly have produced evidence for Roman activity.

5.4 MEDIEVAL

- 5.4.1 There is little evidence for Saxon or early medieval activity in the vicinity of the site, as much of the area at this time was flooded or occupied by marshland. However, there is evidence from a number of sites for activity in the later medieval period, when the first attempts at reclaiming the marshland were being made. On the northern slopes of the

Horselydown Eyot, a north-south aligned channel of possible late medieval date was identified at Lafone Street; evidence of later medieval land reclamation was also found directly to the south at Vinegar Yard.

- 5.4.2 Most of the evidence for medieval activity comes from sites to the southwest, some of it associated with Bermondsey Abbey, which was sited on the Bermondsey Eyot, some 500m south. Although founded as early as AD 1086 as a Cluniac Priory, documentary sources also record a Middle Saxon Minster at Bermondsey, and finds from recent excavations at the Abbey date back to at least the 10th century AD (Douglas 2007). Further evidence of activity associated with the abbey has come from The Trocette (TRE91/TOB95) and Long Walk/Tower Bridge Road/Grange Walk (LWK92).
- 5.4.3 At 9 Tanner Street, some 125m west, medieval pottery was recovered from alluvial deposits (Heard 1988). Further to the southwest, ditches dating to the mid 14th to mid 15th centuries were identified at 8 Tyers Gate, and domestic refuse of 13th to 14th century date was recovered from 100-104 Bermondsey Street (BER90). Further south, evidence of medieval reclamation has come from 156-170 Bermondsey Street (BRB02) and 171 Bermondsey Street (BYG02). Evidence for masonry and timber buildings of possible medieval date has been found at 211 Long Lane and further to the southwest, a ditch and a number of pits dating to the 12th – 14th centuries were revealed at 217-219 Long Lane.
- 5.4.4 Following land reclamation, and as early as the late 14th century, industrial activity was present in the Bermondsey area. This industrialisation expanded during the later medieval period and by the post-medieval period the area surrounding the study site was dominated by activity, largely associated with the leather industry.

5.5 POST-MEDIEVAL

- 5.5.1 Activities associated with leather-working, particularly the tanning industry continued to dominate the surrounding area well into the 19th century. The industry developed, particularly during the Tudor period, as there was a need for noxious industries to be located away from the population of the City to the north of the Thames. Bermondsey was a suitable location, south of the river, and also because a number of tide streams were located here, which provided a constant water source for the industry. There was also a large skin market at the west of Bermondsey and in 1703 Queen Anne granted a charter to the leather workers. The industry is still evidenced in a number of surviving street names, such as Tanner Street and Leathermarket Street. Numerous archaeological interventions in the area have recorded evidence of post-medieval activity,

- including that associated with industrial processes and the dwellings of the employees who worked in the industry.
- 5.5.2 Directly to the west at Brunswick Court, the area investigated was divided by a line of stakeholes on a north-south alignment, with a drainage ditch to the east and linear industrial features to the west (Carew 1997). A little further to the west, traces of 18th century housing were found fronting onto Brunswick Court, along with an infilled channel and features associated with the tanning industry (Watson 1994). At 9 Tanner Street, to the southwest, an 18th century channel was cut by a linear pit containing four upright barrels and a further pit containing large quantities of horn cores and sheep metapodials. Three 19th century tanning pits were also recorded (Heard 1988).
- 5.5.3 At Vinegar Yard directly south a number of early post-medieval channels were recorded, along with a possible fish pond. Extensive evidence of the tanning industry, which occupied the site up till the 19th century, was also recorded. Further to the south at 168 Tower Bridge Road, a mortar floor with associated cobbled surface and drain have also been interpreted as being part of an industrial complex.
- 5.5.4 Extensive evidence for industry and habitation is known further afield. To the northeast, features associated with the tanning industry have been excavated at Queen Elizabeth Street, and evidence of reclamation and domestic activity from the 16th century onwards has been identified at Three Oak Lane, Lafone Street, 241-247, 255 and 283 Tooley Street and 54 Gainsford Street (GFS93). To the south and southwest the leather industry is evidenced, particularly by tanning pits at 36-40 Tanner Street and 159-161 Tower Bridge Road, 151 Tower Bridge Road, 8 Tyers Gate, 100-104 and 156-170 Bermondsey Street, 6-8 Morocco Street, 211 and 217-219 Long Lane, 9 Leathermarket Street and at The Trocette. Other post-medieval activity has also been recorded at these sites and evidence of reclamation and occupation from the 16th century onwards has been found at 171 Bermondsey Street.
- 5.5.5 Documentary evidence from rate books suggests that the study site was occupied by buildings associated with the leather industry until 1814. A vinegar works was then established on the site by Noah Slee, under the company name of Slee, Vickers and Co. (Hall *et al.* 1997, 8). Vinegar manufacture was continued on the site by a number of different companies (finally British Vinegars Ltd.) until 1992, when the works closed down. The remaining structures associated with the industry were the subject of buildings recording surveys carried out in 1992 and 1997 (GLIAS 1992; Hall *et al.* 1997).

6 ARCHAEOLOGICAL METHODOLOGY

- 6.1 The initial archaeological evaluation comprised the excavation of four trial trenches, carried out according to a method statement issued by Pre-Construct Archaeology Ltd. (2000). It was recorded under the site code TWG00 and has been detailed previously (Hall 2000). The second phase of work involved the excavation of a single trial trench in Building 2 towards the south of the site. The work was carried out under the site code TBI01 and has also been reported on previously (Bradley 2001).
- 6.2 The third phase of work comprised three elements, the first two of which, were carried out concurrently. The first element was a watching brief completed on the excavation of underpinning trenches within the shell of Building 3 (which was retained), directly to the north of Building 2. The work was carried out according to a method statement issued by PCA Ltd. (Brown 2001a) and involved the archaeological monitoring and recording of ten trenches excavated by site contractors. The second element was an open area excavation within the former Vat Hall (Building 1), which was also to be retained, and which lay immediately to the east of Buildings 2 and 3 and fronted onto Roper Street. The excavation was conducted according to a method statement issued by PCA Ltd. (Brown 2001b). Because of the need to retain the building shell there were restrictions on the area that could be excavated. The area was stripped of modern overburden by mechanical excavator under archaeological supervision. After the ground level had been reduced by 1.5m the excavation trench was stepped in by 3m for health and safety reasons. This left a sub-rectangular excavation area measuring approximately 23m north-south by 10m east-west.
- 6.3 The final element during this phase of work was a further watching brief, carried out within Building 2, around the area of the phase 2 evaluation. This was completed according to a method statement issued by PCA Ltd. (2002a). A mechanical excavator under archaeological supervision broke out an area of proposed groundworks and when safe an attendant archaeologist entered the trench to record all exposed features. Ground reduction was temporarily halted whenever significant archaeological deposits were identified, in order that they could be recorded. During all three elements of this phase of work, all significant archaeological deposits were investigated and recorded by hand, with features being documented in plan, and section where possible, at scales of 1:20 and 1:10 respectively. This phase of work was carried out between 15th November 2001 and 5th June 2002, also under the site code TWG00 (a separate code, TWO01 was

- issued but not used on site) and has been summarised previously (Pickard 2002a, 2002b).
- 6.4 The following phase of work was an open area excavation in Building 5, located directly to the north of Building 1, which was carried out according to method statements issued by PCA Ltd. (PCA Ltd. 2002b, Divers 2002). Retention of the walls of the structure again placed restrictions on the area that could be investigated. A sub-rectangular area measuring approximately 25m east-west by 12m north-south was excavated, with the same excavation and recording methodology was employed as that for Building 1. The work was carried out between 13th January and 14th March 2003 and was identified under the site code TBA03. It has also been previously summarised (Pickard 2003).
- 6.5 The next phase of work was an open area excavation, carried out in Building 6, to the north of Building 5. It was completed in accordance with a method statement issued by PCA Ltd. (Divers 2003), and involved the excavation of an 'L-shaped' area measuring approximately 17.5m north-south by 17m east-west. The work took place between 18th August and 22nd September 2003 and was recorded under the site code TBB03. It is included in the summary by Pickard (2003).
- 6.6 The final phase of work was an open area excavation carried out in the area of The Gatehouse, north of Building 6 and close to the northeastern corner of the site. It was carried out according to method statements issued by PCA Ltd. (Brown 2003, Leary 2004) and involved the excavation of a sub-triangular area measuring approximately 15m east-west by 8m north-south. This work was completed between 7th September and 7th October 2004, and also recorded under the site code TBB03.
- 6.7 The general methodology for the open area excavations was as follows: Once the overburden had been removed down to archaeological levels the excavation area was cleaned by hand. Archaeological features were then excavated by hand. Most features were initially half excavated except for small, discrete ones, which were fully excavated, and linear features, which were c. 10% excavated. All excavated deposits were recorded on to pro-forma context sheets and all cut features planned at a scale of 1:20 on dedicated 5m² planning sheets. Selected sections were drawn at a scale of 1:10. A black and white print, colour slide and digital photographic record were taken of excavated features. Photographs of work in progress were also taken. Bulk samples were taken from the fills of archaeological features where it was thought appropriate. All features were recorded on a site grid.

6.8 A number of temporary benchmarks (TBMs) were established on the site during the various phases of work. These were transferred from an Ordnance Survey Bench Mark located at 160 Tower Bridge Road, which had a value of 4.01m OD. The investigation areas were surveyed in using a total station theodolite and tied in to the Ordnance Survey grid.

7 THE ARCHAEOLOGICAL SEQUENCE

7.1 PHASE 1: NATURAL DEPOSITS

- 7.1.1 The underlying natural deposits across the site were sands and gravels associated with the formation of the Horselydown Eyot. They were recorded in all phases of the investigations and exhibited subtle variations both in composition and elevation between different areas.
- 7.1.2 Towards the northern edge of the site the natural deposit recorded in Trench 2 of the initial evaluation (TWG00) was described as a moderately compacted, mottled orange/yellow/grey sand [44], with an upper elevation of +1.05m OD. Nearby, in The Gatehouse excavation (TBB03) the natural deposit was described as a variably compacted, pale yellow and orange mottled sand with occasional gravel [1928]. This was recorded at an upper elevation of +0.95m OD. Natural sand [5] was seen at +1.12m OD in Trench 1 of the initial evaluation.
- 7.1.3 A short distance to the south, in Building 6 (TBB03) the natural deposit was described variably as a loose, light yellowish brown sand [1157], a loose, light yellowish grey-brown sand [1240], and a moderately compacted, brownish yellow coarse sand [1585]. The upper elevation of the deposit varied from +0.94m OD ([1585]) to +0.50m OD ([1240]), with a broad downward slope from north to south being observed.
- 7.1.4 Further to the south in Building 5 (TBA03), the natural deposit was a soft, very light grey fine sand with occasional gravel [1091], also with an upper elevation of +0.50m OD. To the south of this in Trench 3 of the initial evaluation, a very compact, dark grey clayey sand with frequent gravel [88] was at +0.45m OD. In the Building 1 excavation (TWG00) directly to the south a firm, light grey sand [549] was at +0.77m OD, though it was not clear whether the upper levels of this deposit were actually natural. At the eastern edge of the excavation area, the upper level of natural sand [103] in Trench 4 of the initial evaluation was at +0.30m OD.
- 7.1.5 To the west, in the Building 3 watching brief (TWG00) the upper level of the natural sand was variable, as there appeared to have been truncation of the deposit by channel formation. However, a variably compacted, mid greyish yellow, silty sand [224] was recorded at an upper elevation of +0.87m OD in underpinning trench TP4, and a variably compacted, golden brown, fine to medium sand [344] was present at +0.77m OD in

underpinning trench TP8. The original upper elevation of the sand in this area can therefore be assumed to lie approximately between +0.80m OD and +0.90m OD. In the other underpinning trenches the surviving upper level of the sand was identified between +0.59m OD (TP1) and +0.25m OD (TP5), truncation having occurred in these areas. Directly to the south, a silty sand [712] was found at an upper elevation of +0.47m OD during the Building 2 watching brief (TWG00). Previously a loose, light yellowish brown clayey sand [11] was seen at an upper elevation of +0.24m OD during the phase 2 evaluation (TBI01).

7.2 PHASE 2: PREHISTORIC 1 (Figure 4)

- 7.2.1 This phase comprised a number of features cut into the natural sand and gravel, before being mostly sealed by a later sand deposit. The earliest feature recorded in Trench 1 of the initial evaluation was a pit [9], the shape of which was difficult to ascertain as it had been truncated and extended beyond the edge of excavation. Its visible dimensions were 1m east-west by 0.8m north-south, with a depth of 0.17m. Its fill [8] was a light grey, slightly silty sand but no finds were recovered. The pit was truncated to the north by another [4]. Again its form was not fully visible as it continued beyond the edge of the trench, though it measured at least 1m east-west by 0.4m north-south and was 0.18m deep. Burnt flint and ceramic fragments were recovered from its light greyish brown, silty sand fill [3]. Pit [9] was truncated by another pit [7] to the northwest. This was oval in plan, measuring at least 0.8m east-west by 0.6m north-south but only survived to a depth of 80mm. It contained a light greyish brown, silty sand fill [6] but no finds were recovered.
- 7.2.2 To the south, numerous stakeholes, apparently belonging to this early phase were identified during the Building 6 excavation. They were distributed in two broad groups, the first [1592] towards the northeast of the excavated area (highest level, +0.94m OD), and the second [1602] to the west (highest level, +0.58m OD). No observable patterns in the distribution of the stakeholes could be seen, but they may have represented a number of small, ephemeral structures. All of the features appeared to have silted up naturally and none produced any dateable finds.
- 7.2.3 Numerous stakeholes were also identified to the south in the Building 5 excavation, cut into the natural sand. They occurred mostly in a south-central area of the excavation (observed at upper elevations of between +0.39m OD to the west and +0.75m OD to the northeast) and again few patterns could be observed. However, one group towards the centre of the area may have represented a NNE-SSW fence line and another group towards the south may have represented a northwest – southeast aligned structure. This

would have measured up to 1.8m in length, with a width of approximately 0.9m. The function of any such structure is unclear and none of the stakeholes produced any dateable finds. A short distance to the south of the possible structure, a 0.15m deep irregular feature [1097] has been interpreted as a tree throw, recorded at an upper elevation of +0.48m OD. Whilst this was a natural feature, struck flint was recovered from its fill [1096].

7.2.4 A short distance to the west a small sondage revealed two further features apparently belonging to this phase. The first of these [1086] appeared to be the northern terminus of a NNW-SSE aligned ditch or gully. Only the northern 1.8m of the feature was present in the sondage. It was up to 0.9m wide and 0.25m deep, with steeply sloping sides and a flat base at +0.06m OD. It was filled with a soft, yellowish grey sandy silt [1087], which included burnt and struck flint. Immediately to the west was another linear feature [1088], aligned north-south and extending beyond the northern, western and southern edges of the sondage. It was at least 0.4m wide but only survived to a depth of 50mm (base level, +0.15m OD), and no finds came from its fill [1089]. Although the evidence was scant, it appears that both may have served some type of drainage function.

7.2.5 The most extensive evidence of activity during this phase came from the excavation in Building 1. Numerous stakeholes and some postholes were evident within this area. Towards the northern edge of the excavation a group of stakeholes [640] – [648] formed no obvious pattern but may have been associated with one or more small, temporary structures. The features were at upper elevations of between +0.52m OD and +0.57m OD. A few other such features were spread sporadically across the centre of the site, but the greatest concentration was towards the south. Despite there being numerous features here, no discernible patterns were evident. Indeed not all the stakeholes and postholes belonged to this phase, as some clearly belonged to two succeeding prehistoric phases (see Sections 7.3 and 7.4, below). Unfortunately many were discrete features, and lacked dating evidence, it was not possible to be sure which phase each belonged to. They were recorded at apparent upper elevations varying between +0.44m OD and +0.55m OD.

7.2.6 Other features in this area could be phased with more certainty as they were truncated by features of the later Prehistoric 2 phase. Small pit/posthole [600] was truncated by a later ard mark. It was circular in plan, with gently sloping sides and a concave base. It measured 0.42m in diameter and was 0.17m deep (base level, +0.34m OD). The fill [599] was a variably compacted, mid grey silty sand with very occasional small, sub-rounded pebbles. Unfortunately no finds were recovered so it could not be accurately dated,

neither were there any obviously associated features in the near vicinity. A little over 4m to the northeast was another small pit or possible posthole [602], which measured 0.38m in diameter and was 0.16m deep. It was circular in plan with near vertical sides and a flat base at +0.34m OD. The fill [601] was similar to [599] but again did not include dateable finds, neither were there any obviously associated features. Less than 4m to the northwest was a more substantial pit [651]. This was oval in plan, with concave sides and base. It measured at least 1.7m NE-SW (having been truncated by a modern stanchion to the northeast), by 1.3m NW-SE, with a depth of 0.23m (base level, +0.18m OD). Fragments of pottery and burnt and struck flint were recovered from the fill [650], which was a soft, mid greenish grey and yellowish brown silty sand. The function of the feature was unclear but was interpreted by the excavator as a possible rubbish pit. The only contemporary features in the vicinity were four stakeholes, two to the northeast and two to the southwest, though none of these produced any finds.

- 7.2.7 Towards the southern edge of the excavation area a further feature [612], which appeared to belong to this phase, was partly exposed at an upper elevation of +0.50m OD. The area of the feature exposed only measured 0.90m north-south by 1.30m east-west and it was difficult to interpret whether it was part of a north-south aligned linear feature or part of an oval pit. It had gently sloping, concave sides, which broke to an undulating base, though only its lower 0.15m survived. The fill [611] comprised a variably compacted, light to mid brown silty sand. It contained occasional burnt flint and charcoal flecks, along with what appeared to be very degraded pottery fragments. Because it was difficult to ascertain the exact morphology of the feature, it was also difficult to interpret its function.
- 7.2.8 To the west, two possible north-south aligned channels [225] and [226] recorded in TP4 of the watching brief in Building 3 may also have belonged to this phase, but they were only recorded in section (at upper elevations of +0.82m OD and +0.57m OD, respectively) and no finds were recovered ([225] may also have dated to a later phase, see Section 7.4, below).
- 7.2.9 Further features apparently belonging to this phase were also recorded during the Building 2 watching brief. Three closely grouped postholes [716], [718] and [720] may have been elements of a single structure or fence line, but they were only exposed in a small area, so it was not possible to ascertain the full extent of any such structure. To the south of these was a small pit [722] that exhibited signs of burning and has been interpreted as a 'fire pit', possibly utilised for cooking. Immediately to the south a possible

channel [714] was exposed, but as only a small part of this feature was visible it was impossible to ascertain its exact form or date, and it may actually have belonged to a later phase (see Section 7.4, below).

7.3 PHASE 3: PREHISTORIC 2 (Figure 5)

- 7.3.1 The Phase 2 features were sealed by varying deposits. The stakeholes in Building 6 were covered by a layer of reworked natural material, described as a loose, mid greyish brown, coarse-grained sand [1156] (upper elevation +0.68m OD – +0.77m OD), or a firm, light brown silty sand [1598] (upper elevation, +0.61m OD - +0.70m OD). This material was between 50mm and 200mm thick and contained burnt and struck flint. A comparable, but thicker deposit [1243] was recorded in section only at the southern edge of the site. This was up to 0.40m thick, with an upper elevation of +0.88m OD. In the Gatehouse excavation a friable, light brown to yellow, coarse sand [1926] was identified overlying the natural sand. This was up to 0.25m thick, with the surface elevation varying between +0.93m OD and +1.00m OD. The features in Building 5 were sealed by a 80mm – 100mm thick layer of reworked natural material [1090] (upper elevation, +0.63m OD - +0.67m OD), described as a soft, light grey silty sand, and containing burnt and struck flint. The features in the Building 1 excavation were covered by a slightly variable deposit [584] (upper elevation, +0.67m OD), described as a soft and friable, greenish grey to dark grey silty sand and interpreted as a possible buried ploughsoil. Occasional sherds of possibly intrusive pottery, probably of Late Bronze Age date (though possibly earlier), were recovered from this deposit, along with intrusive, later pottery and CBM, frequent burnt flint and some struck flint. The features recorded during the Building 2 watching brief were also sealed by material [703]/[704] interpreted as a buried soil horizon.
- 7.3.2 Cut into these varying sealing layers were features associated with a second phase of prehistoric activity. The most striking and extensive of these features were series of mostly NW-SE and NE-SW aligned narrow linear cuts. These were mostly concentrated in the southern half of the Building 1 excavation [590], but were also recorded intermittently further to the north. Similar features [726] were also seen during the Building 2 watching brief. Individual examples were up to 1.6m long but had clearly originally extended for at least 8m along the major axes. The features measured between 30mm and 100mm in width and depth and exhibited either symmetrical or skewed 'v-shaped' profiles.
- 7.3.3 The features were recorded over a total area in excess of 200m², apparently cut from levels of between +0.44m OD and +0.55m OD, and were interpreted as prehistoric ard

marks. This interpretation was confirmed by specialist examination of the features (Schwenninger and Branch 2002): *“They possess all the typical characteristics of ard marks caused by dragging the share (point) of a simple form of plough, through the soil, parting it rather than turning it over...They are remarkably well preserved at this site...They display all the characteristics of textbook examples of ard marks.”* The ard marks are likely to date to the Late Neolithic to Early Bronze Age periods, though few dateable finds were recovered.

- 7.3.4 In addition to the ard marks a number of postholes and stakeholes may also belong to this phase. Unfortunately because a number of these features were only visible where they cut natural sand, and because of a lack of stratigraphic relationships between features at this level, it was difficult to ascertain which features pre-dated the ard marks, which were contemporary and which were later. However it can probably be assumed that features located within the area of the ard marks were not contemporary, as any posts here would surely have hindered ploughing activities. Nevertheless at least one group of stakeholes [1600] in the Building 6 excavation area, and therefore to the north of the ploughed zone, does appear to have been contemporary with the ard marks. This group was located towards the western edge of the excavation, but formed no observable pattern. The stakeholes were sub-circular in plan with steep-sided ‘U- and V-shaped’ profiles. They measured between 40mm and 80mm in diameter, were 50mm to 90mm deep and apparently cut from levels of between +0.61m OD and +0.70m OD. None produced any dateable finds. A sub-circular pit [1159] recorded in Building 6 may also have been contemporary, but was only recorded in section (upper elevation, +0.67m OD) and produced no dateable finds.
- 7.3.5 A possible well [586] located at the northern edge of the area of ard marks in the Building 1 excavation may also have been contemporary. This was circular in plan with near vertical, stepped sides, and apparently cut from a level of +0.68m OD. It measured 1.20m in diameter and was at least 0.90m deep, excavation having ceased at the level of the water table. It was backfilled with a soft, mid brown peat-like material [585], containing moderate inclusions of branch fragments with some burnt and possible struck flint.
- 7.3.6 A final feature, which stratigraphically may belong to this phase, but was interpreted as of possible natural origin, was a sub-circular pit [1930] in the Gatehouse excavation. This was cut from an apparent surface level of +0.90m OD, and had steeply sloping sides and a gently concave base. It measured up to 1.37m in diameter and was 0.51m deep, cut to a basal level of +0.39m OD. It was backfilled with a single deposit [1929], which

comprised a compact, mid grey silty sand. This contained burnt and struck flint, including a flint blade, as well as four fragments of intrusive Roman tile, dating between AD 50 and 200.

7.4 PHASE 4: PREHISTORIC 3 (Figure 6)

7.4.1 The final phase of prehistoric activity was represented by a number of scattered features, the majority of which have been assigned to this phase because they truncated earlier ard marks, although some other features are included here. In Building 6 the reworked sand layer [1156] was cut by a WNW-ESE aligned linear feature [1572] (upper elevation between +0.64m OD and +0.88m OD). This extended for at least 11.72m, continuing beyond the western and southern edges of the excavation. It was up to 3.5m wide and at least 0.56m deep (basal elevation between +0.14m OD and +0.26m OD). It had near vertical sides, becoming concave and breaking to an uneven base (Fig. 7). The basal fill [1562] on the northern side was a 100mm thick deposit of soft, mid to dark brown silty sand, containing occasional flecks of organic material (basal level +0.14m OD (WNW end) - +0.26m OD (ESE end)). It has been interpreted as natural silting. It was overlain by 0.25m of soft, mid brown silty sand [1564], also containing occasional flecks of organic material. This in turn was overlain by an upper deposit of firm, light brown silty sand [1559], up to 0.23m thick. On the southern side the basal fill was a 100mm thick deposit of silty sand [1574], probably the same material as [1562]. This was overlain by up to 0.58m of loose, mid yellowish brown silty sand [1560], which contained occasional struck flints. The upper fill on this side was a variably compacted, mid to light brown silty sand [1558], up to 0.33m thick. The feature has been interpreted as a possible drainage channel or ditch. A single posthole [1590] was cut into upper fill [1558] after the ditch had been backfilled. This was sub-circular in plan, with near vertical sides becoming concave and breaking to a flat base. It measured up to 0.31m in diameter and was 0.38m deep. No dateable finds were recovered from the fill [1589] and no clearly associated features were recorded in the vicinity.

7.4.2 A further WNW-ESE aligned ditch [1079]/[1104] was recorded in Building 5 to the southeast. This continued on the same alignment as [1572] and appears to have been the same feature, though it had suffered more extensive truncation. Ditch [1079]/[1104] had steeply sloping, concave sides, gradually breaking to a generally flat base (Fig. 7). It was cut from a level of between +0.60m OD and +0.68m OD, was up to 1.64m wide and 0.39m deep (basal elevation +0.08m OD (WNW end) – +0.28m OD (ESE end)). A 13m length of the feature was present and it extended beyond the northern and eastern edges of the excavated area. It was recorded as having two fills, though no primary fill, or

natural silting was present. Towards the west the basal fill [1106] was described as a soft, mid to dark brown sandy silt, up to 0.27m thick. Towards the east the basal fill was recorded as [1078] and was described as a very soft, mottled yellowish brown, mid yellow and light yellow silty sand, up to 0.29m thick. It contained a small quantity of burnt flint. It was overlain by a secondary fill, to the west described as a variably compacted, dark brown sandy silt, up to 0.49m thick [1105], and to the east as a loose, light grey silty sand, up to 0.41m thick [1077]. A small quantity of burnt and struck flint was recovered from the latter deposit.

- 7.4.3 In the Building 1 excavation area a number of postholes and stakeholes truncated ard marks and clearly belonged to a later phase. A number of other postholes and stakeholes in the area could also belong to this phase, but lack of stratigraphic association prohibits accurate interpretation. In the main area of ard mark concentration a number of postholes and stakeholes including [596], [621], [622], [623], [657], [661] and [671] (upper elevations, +0.44m OD - +0.53m OD), clearly truncated ard marks. However, as was the case with the Phase 2 features in the area, it was difficult to ascertain any clear patterns to suggest structures which may have been present.
- 7.4.4 In the Building 3 watching brief a possible small channel [225] exposed in TP4 may have belonged to this phase, but so little of the feature was exposed that its exact form and date were not clear. Finally, in the Building 2 watching brief a north-south aligned feature [714] may also have belonged to this phase, but again, interpretation was restricted by the small area exposed and a lack of dating evidence.
- 7.4.5 Because of a lack of clear dating evidence and stratigraphy it has only been possible to group the prehistoric activity into these three broad, loosely defined phases. The exact dating of each is unclear but can be broadly approximated as follows:
- Phase 2 (Prehistoric 1) = c. Neolithic
 - Phase 3 (Prehistoric 2) = c. Neolithic/Bronze Age
 - Phase 4 (Prehistoric 3) = c. Bronze Age/Iron Age

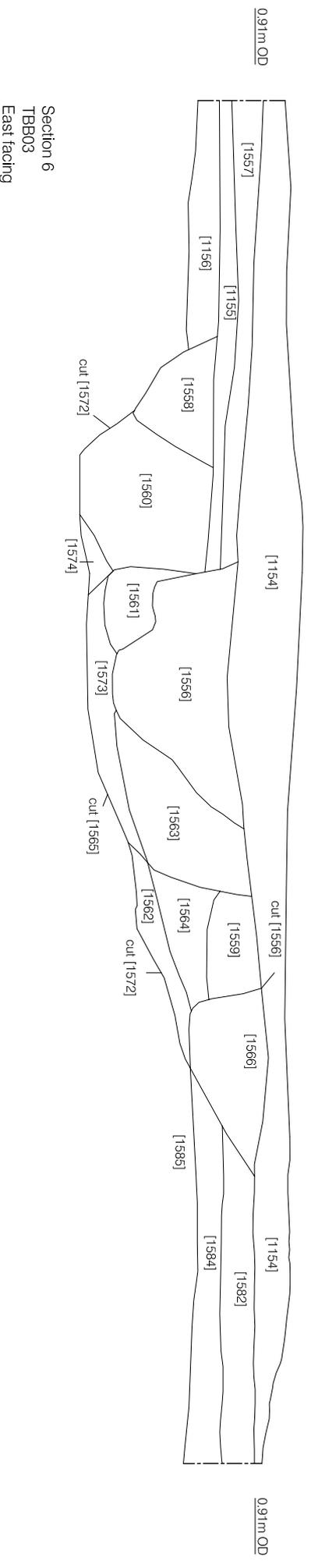






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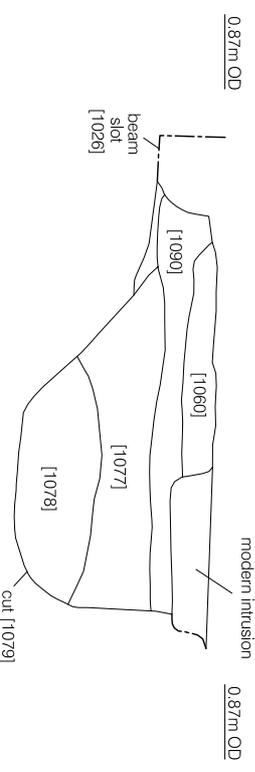
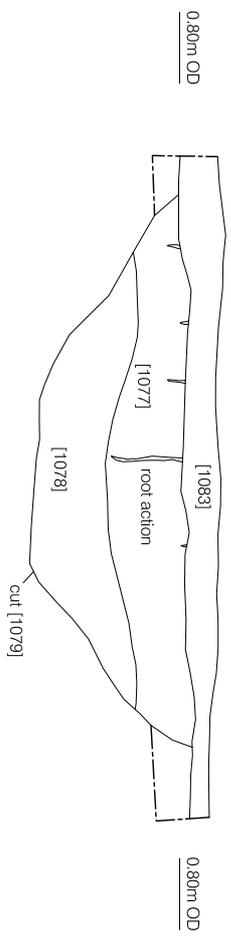


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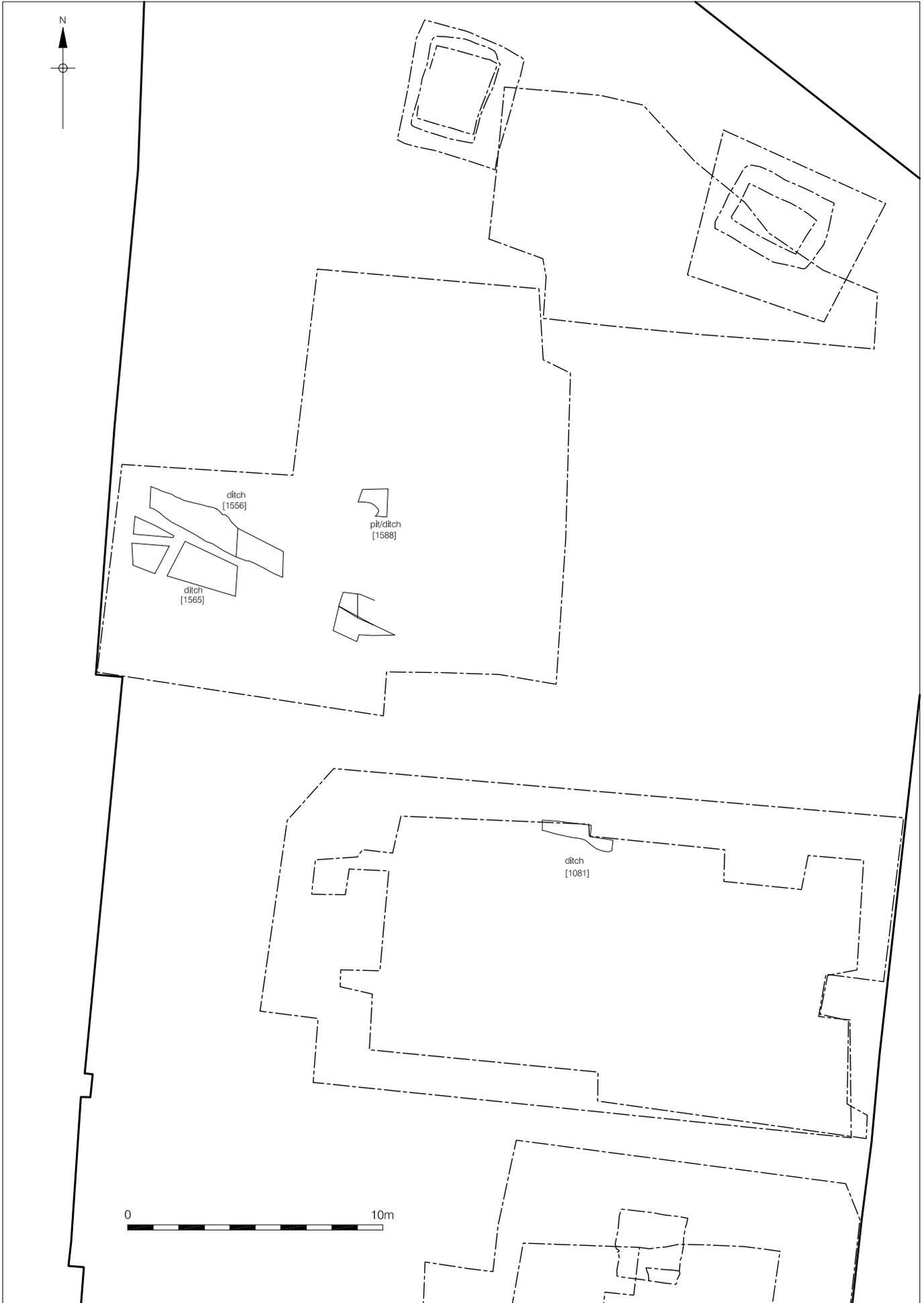
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Figure 7
Section 6, TBB03
Sections 16 and 15 TBA03
1:25 at A4



7.5 PHASE 5: LATE PREHISTORIC SOIL FORMATION

- 7.5.1 In a number of the areas of investigation, prehistoric features were apparently overlain by deposits suggesting the presence of buried land surfaces. What is not clear in each case, however, is whether these deposits actually sealed the features or whether this was the level from which the features were cut, but were not recognised until earlier deposits were exposed.
- 7.5.2 In Building 6 towards the north of the site the backfilled ditch [1572] and posthole [1590] were quite clearly sealed by later deposits. Directly overlying the backfilled features was a 0.12m thick layer of loose, pale orange silty sand [1155], which contained occasional struck flint. This in turn was overlain by a variably compacted layer of light brownish yellow silty sand [1557] up to 0.15m thick. This appears to have been disturbed at a later date as it included intrusive post-medieval pan tile fragments. Together these layers have been interpreted as a buried soil horizon. Elsewhere in the excavated area [1155] was also recorded as [1584], and [1557] as [1582]. To the southeast, backfilled ditch [1079]/[1104] in Building 5 was overlain by layer [984], also interpreted as a buried soil horizon and probably corresponding with the materials recorded to the northwest. The surface elevations of these layers varied between +0.90m OD in Building 6 and +0.82m OD in Building 5.
- 7.5.3 In the Building 1 excavation, layer [603]/[609] was also interpreted as a buried soil horizon. This comprised a soft to moderately compacted, mid grey to brown silty sand and silty clay. It was between 0.10m and 0.20m thick, with a surface elevation varying between 0.83m OD and 1.03m OD. This lay above the backfilled prehistoric features in this area and may have post-dated them. However, it has been suggested by the excavator that this may actually have been the ground surface from which the ard marks, along with contemporary and later features were cut, the features not becoming fully visible until the buried surface had been removed. This possibility was also suggested during specialist examination of the sequence (Schwenninger and Branch 2002). This would suggest that the buried land surface was chronologically earlier than the later phased prehistoric features, which is not a problem when considered solely in the context of the Building 1 excavation. However, the latest phase prehistoric features in Buildings 5 and 6 were clearly sealed by the buried surface deposits. This sequence disparity would suggest either that the buried soil horizon in the Building 1 was a different deposit from those in Buildings 5 and 6, or that the features in Buildings 5 and 6 were earlier than

suggested, or that the features in Building 1 were not actually cut from the level of the recorded buried surface.

- 7.5.4 Whatever the nature of the buried soil, the layer recorded in Building 1 has been further described as a buried land surface possibly subject to occasional floodwater inundation and incipient soil development. The thinness of the layer is explained either by it having been truncated or that it may have represented the A horizon of a very juvenile soil, quite likely considering the site's location on the flood plain. This would suggest that soil formation only lasted for a short period of perhaps just a few decades, and consequently the ground surface was only exploited for a short duration (*ibid.*).

7.6 PHASE 6: LATE PREHISTORIC ALLUVIATION

- 7.6.1 It appears that later prehistoric activity across much of the site was halted by rising water levels and increasingly frequent inundation of areas on the lower slopes of the Horselydown Eyot. This was most clearly demonstrated in the excavations in Building 1. In this area the buried soil [603]/[609] was extensively sealed by alluvial deposit [492] (though this was absent in areas of deep, recent truncation). The alluvial layer comprised a silty clay deposit up to 0.36m thick, with an upper elevation varying between +0.96m OD and + 0.88m OD. It was deposited by standing or slow moving water on the Thames floodplain as a result of rising water levels and widespread probably seasonal flooding of low-lying areas at this time (Schwenninger and Branch 2002). This phenomenon occurred over a large area of the lower Thames Valley and Estuary, and included numerous localised deposition and erosion episodes. Its archaeological implications in the local area have previously been discussed (e.g. Ridgeway 2003). Lithological analysis of column samples taken through layer [492] also suggested there may have been some disturbance and soil formation associated with the deposit (see below, Appendix 14).
- 7.6.2 The alluvium was also recorded in Trenches 3 and 4 of the initial evaluation of the site. In Trench 3 it was recorded as [86], a mid greyish brown clay with an upper elevation of +1.26m OD (though this contained intrusive, late medieval/post-medieval pottery and CBM, possibly from an upper layer, not identified at the time of excavation). In Trench 4 it was recorded as [99], with the upper surface at +1.18m OD. It is likely however, that the upper levels recorded in these two trenches represented the latest deposition in the post-Roman period (see Section 7.8, below), though it is possible that the top of the alluvium in Trench 4 was truncated by a later ditch, not recognised during the evaluation, but identified in the Building 1 excavation (see Section 7.9, below). In the Building 3 watching

brief alluvial deposits were present in a number of the sequences recorded. In TP1 it was described as a firm, blue – greyish brown silty clay [209], up to 0.20m thick, with an upper elevation of +0.79m OD. In TP2 it was recorded as a firm, bluish grey silty clay [215], up to 0.35m thick, with an upper surface level of +0.87m OD. In TP9 it was described as a firm, reddish grey silty clay [347], up to 0.40m thick, with an upper elevation of +0.80m OD. To the south, in the Building 2 evaluation trench, a firm, mid grey silty clay [9] was recorded. This was up to 0.40m thick, with an upper elevation of +0.66m OD and also appears to have been associated with the same alluvial inundation phase.

7.7 PHASE 7: ROMAN (Figure 8)

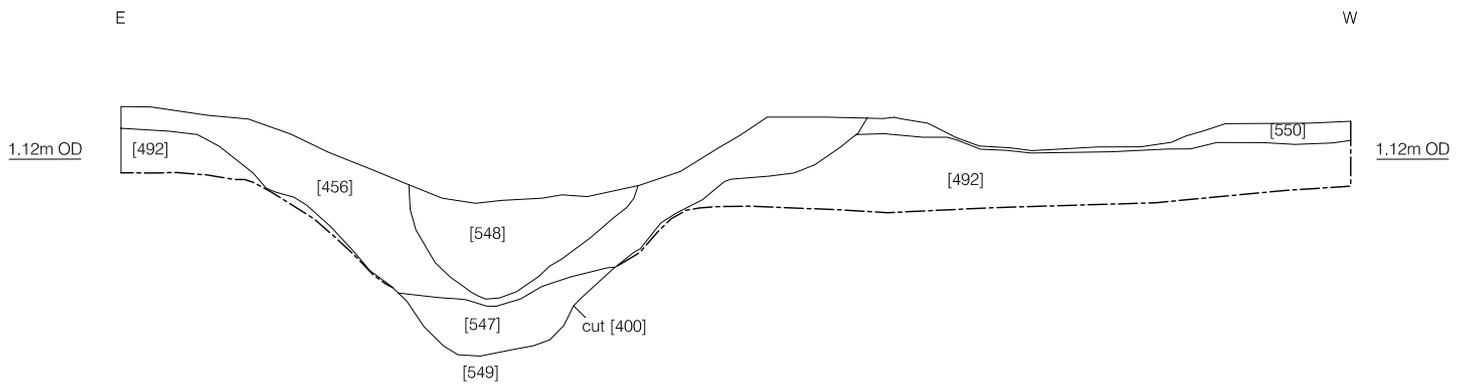
- 7.7.1 Although there was clearly late prehistoric alluvial inundation over much of the southern half of the site, there was limited activity during the Roman period further to the north. Features of Roman date were only detected in Buildings 5 and 6 in the northern, and slightly elevated half of the site, although the underlying surface levels suggest that this elevation will have been marginal.
- 7.7.2 In Building 6, prehistoric ditch [1572] appears to have been recut during the Roman period as ditch [1565]. This cut through the overlying buried soil [1155]/[1157], possibly suggesting the outline of the earlier ditch was still visible as a linear depression. Ditch [1565] had moderately sloping, slightly concave sides, which broke to a flat to slightly concave base, recorded at a lowest level of +0.10m OD. It was up to 2.86m wide and 0.69m deep, with an upper elevation of +0.89m OD, and was recorded over a distance of 12.42m, extending beyond the western and southern edges of the excavated area. The primary backfill [1573] was a soft, mid to dark brown, clayey, silty sand, up to 0.11m thick, which appears to have been a natural backfilling deposit. Above this, on the northern side of the ditch, was a loose, mid yellowish brown silty sand [1563], up to 0.45m thick. On the southern side of the ditch, the basal fill was overlain by a soft, very dark greyish brown sandy silt [1561], up to 0.55m thick. Fills [1563] and [1561] were overlain by a final backfilling deposit [1555]. This comprised an organic-rich, very soft, dark brownish grey clayey silt, up to 0.49m thick, and included abraded fragments of Roman tile.
- 7.7.3 A smaller ditch [1556] was also cut along the northern edge of prehistoric ditch [1572]. This had an asymmetrical profile, with the southern side being straight and near vertical, whereas the northern side sloped at c. 45°. The base was generally flat, recorded at a lower level of +0.63m OD. The ditch was up to 0.82m wide and 0.34m deep, and was recorded at an upper elevation of +0.94m OD. It was recorded along the full length of ditch [1572] and extended beyond the western edges of the excavation area. The ditch

- contained a single fill [1566], a soft, light brown silty sand, which contained abraded Roman tile and pottery, along with burnt and struck flint.
- 7.7.4 A heavily truncated feature [1588] towards the centre of the Building 6 excavation also appears to have been of Roman date. Due to heavy truncation from all directions it was difficult to determine whether this was originally a pit or a linear feature. Only the southern edge could be recorded, which exhibited a steep, concave slope, breaking to a concave base. It measured at least 1.12m north-south by 1.10m east-west and was at least 0.32m deep, upper and lower levels being recorded at +0.66m OD and +0.34m OD respectively. No buried soils or alluvial deposits were present in this area and the feature was seen to cut the underlying natural sand. The basal fill was a 0.25m thick layer of soft, mid brown clayey silt, which appeared to contain some organic material [1587]. It was overlain by an upper fill [1586], which comprised interleaving layers of soft, greyish brown and white, clayey silt and silty sand. A single sherd of pottery was recovered from this deposit, along with very occasional burnt and struck flint.
- 7.7.5 A rather different sequence was recorded in Building 5. Buried soil [984] was overlain by a 90mm thick deposit of firm, light greyish brown, clayey, sandy silt [981]/[1060]/[1083], with an upper surface between +0.69m OD and +0.77m OD. This appears to have been an alluvial deposit and probably represented the spread of prehistoric alluvium recorded in areas to the south (Late Bronze Age pottery was recovered from [1060] and [1083]). However, as was the case with prehistoric ditch [1572] in Building 6, so ditch [1079]/[1104] also seems to have been recut during the Roman period as ditch [1081]. This appears to have been the southern extension of ditch [1565], and cut not only through the buried soil but also the overlying alluvium. This suggests that by the Roman period alluvial deposition had reached as far north as the area between Buildings 5 and 6. The Roman ditch recut was therefore excavated through essentially dry land to the north, but through a periodically flooded area to the south. It is possible that it was dug in order to provide drainage as surrounding water levels were rising. Ditch [1081] exhibited c. 45° sloping, concave sides and a slightly concave base. It was up to 0.50m deep, with a base level recorded at +0.19m OD. It was backfilled with a single deposit [1082], which comprised a variably soft and sticky, grey, sandy silt to clayey sandy silt.

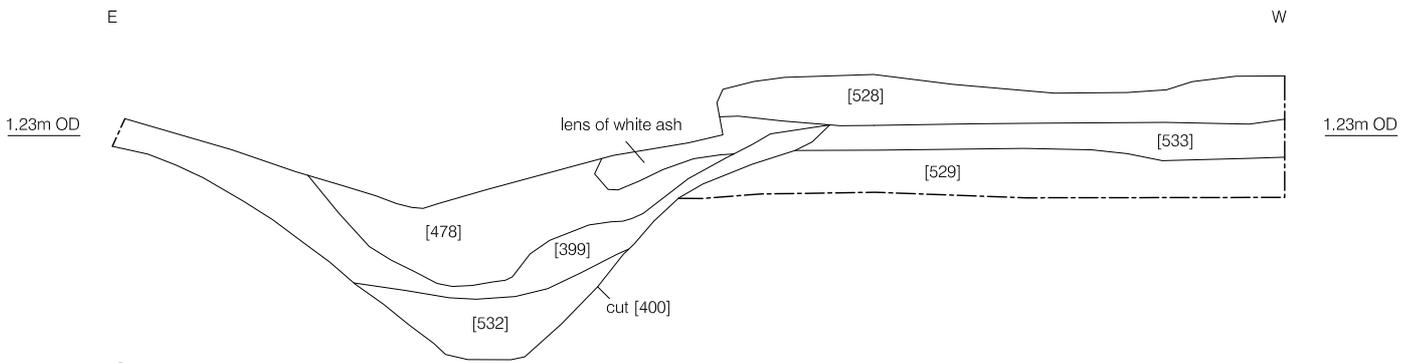


7.8 PHASE 8: POST-ROMAN ALLUVIATION

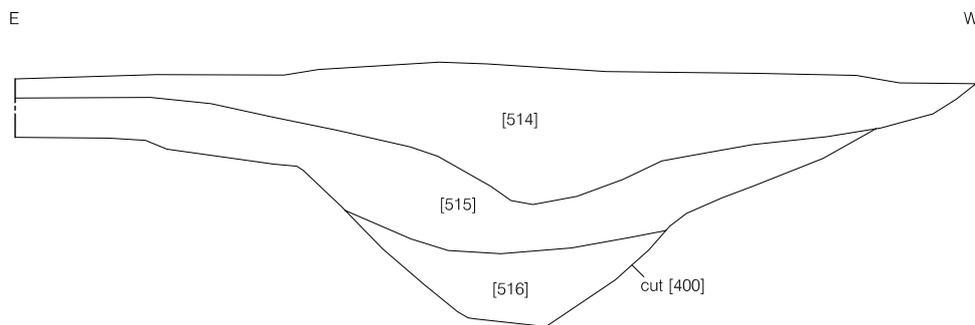
- 7.8.1 It appears that attempts at drainage during the Roman period achieved only short-term success as the whole site eventually became inundated by rising floodwaters. The Roman ditches in Buildings 5 and 6 and the remaining northern areas of the site became covered in layers of alluvium. Ditches [1565] and [1556] in Building 6 were sealed by a layer of loose, light brown alluvial sand [1154], between 0.15m and 0.20m thick, and with surface elevations varying between +0.92m OD and +1.03m OD. This material included fragments of medieval pottery, Roman pottery and ceramic building material (CBM), along with burnt and struck flint, all clearly derived from earlier deposits. Elsewhere, this deposit was numbered [1471] (which also included Roman CBM and medieval pottery), with an upper elevation of up to +1.42m OD. A similar deposit [1577], which only covered prehistoric postholes [1592], but contained Roman pottery and CBM, also appears to have been a Roman and/or post-Roman alluvial layer (it appears to have contained some residual prehistoric and intrusive post-medieval material). The upper elevation of this varied between +1.01m OD and +1.24m OD.
- 7.8.2 During the Gatehouse excavation, a number of deposits of apparent Roman and later date were found to overlie the backfilled prehistoric feature [1930]. Sealing the feature was a soft, light grey silty sand [1925], up to 0.20m thick, with a maximum surface elevation of +1.23m OD. Various finds were recovered from the deposit, including burnt and struck flint, prehistoric pottery, Roman CBM and pottery, medieval pottery and intrusive later glass fragments. Layers [1918] and [1927] recorded elsewhere in the Gatehouse excavation appeared to be comparable deposits (the former containing 1st-2nd century Roman CBM). Silty sand [1925] was overlain by a 100mm thick layer of sandy lenses [1878], which also appears to have represented the same post-Roman alluviation as [1154] in Building 6 (though it also included intrusive post-medieval CBM!). The surface of this varied between +1.18m OD and +1.39m OD and a single fragment of Roman CBM was recovered.
- 7.8.3 The whole site appears to have lain in a frequently or continuously flooded area for a considerable time. The alluvial deposition, which commenced in the later prehistoric period in the southern half of the site and in the Roman period to the north, continued throughout the post-Roman period. There was little or no evidence of activity on the site until the late medieval or early post-medieval period.



Section 7
TWG00
North facing



Section 5
TWG00
North facing



Section 4
TWG00
North facing



Figure 10
Sections 7, 5 and 4, TWG00
1:25 at A4

7.9 PHASE 9: LATE MEDIEVAL/EARLY POST-MEDIEVAL (Figure 9, 11)

- 7.9.1 The sequences recorded across the site suggest alternating drier and wetter phases, with a number of alluvial accumulations being deposited rather than one continual deposition. It appears that towards the end of the medieval period or in the earlier post-medieval period, there may have been a drier phase, with the upper post-Roman deposits in some sequences suggesting a marshy environment, rather than one of continual inundation. These deposits have also tended to include finds from reworked late medieval and early post-medieval contexts, suggesting some contemporary activity in the area.
- 7.9.2 In Building 1, a firm, dark brown to black clayey silt [534], which overlay alluvium [492], appears to have been one such deposit. It was identified at an upper elevation of +1.24m OD. On the western side of the excavation area, [492] was overlain by a soft, mid greenish grey sandy silt alluvium [529], with an upper elevation of +1.21m OD. Slightly to the north, [492] was overlain by a 'marshy' deposit [530], and towards the south of the site a firm, mid greyish brown clayey silt [579], with an upper elevation of +1.47m OD was seen overlying [492]. In Building 6 the upper levels of deposit [1471] contained late medieval/early post-medieval material. In the Building 3 watching brief, the upper levels of 'alluvial' deposit [209] suggested a possible marshy environment, as did the upper levels of layer [215] in TP2. This was overlain by a further 'marshy' layer [214] with an upper elevation of +1.12m OD. In TP6, layer [219] also appears to have been a comparable deposit.
- 7.9.3 The earliest activity post-dating the alluvial and marsh deposits appears to have been associated with attempts to drain and reclaim the area for dry land activities. The most extensive evidence for this has come from the excavation in Building 1. The earliest drainage features appear to have been two ditches [535] and [555], both aligned approximately east-west and cut into layers [534] and [492] respectively. The former of these was located towards the centre of the site, where it was recorded intermittently over a distance of at least 5.20m. It was up to 0.46m wide and 0.25m deep, with steeply sloping sides and a gently concave base. It was recorded at an upper elevation of +1.24m OD, with the base varying in level between +0.84m OD and +0.98m OD. It was backfilled with a deposit of firm, dark greenish grey clayey silt [536], which contained finds suggesting a 16th/17th century date of deposition. Ditch [555] was located some 6.5m to the north. This too was recorded intermittently over a length of at least 4.92m. It was up to 0.45m wide and 0.25m deep, with very steep sides and a gently concave base.

- It was recorded at an upper elevation of +1.17m OD with the basal level varying between +0.91mOD and +0.98m OD. The fill [556] comprised a firm and sticky, greenish grey clayey silt with frequent charcoal flecks, though no dateable finds were recovered.
- 7.9.4 Two pits located at the eastern edge of the excavation area may also have been contemporary with these ditches. The larger and more northerly of these was pit [509], which appeared to be oval in plan (though it was heavily truncated by later features (Fig. 9, 11), It measured at least 1.4m east-west by 1.2m north south. It appeared to have gently sloping, slightly concave sides and a flattish base, though only the basal 0.15m of the pit survived. The basal elevation was recorded at +1.23m OD. The single fill [508] comprised a firm, dark grey clayey silt that contained small quantities of pottery, CBM and oyster shell, broadly dated to 1580-1700, suggesting a later backfilling. The second pit [507] lay a short distance to the south. It was oval in plan, measuring 1.05m north-south by at least 0.80m east-west, extending beyond the eastern edge of excavation. It was recorded at a basal elevation of +1.22m OD and appeared to have a concave base and sides, though only the basal 0.12m of the feature survived. The primary fill [520] comprised a moderately compacted, mid brown sandy clay, and in places extended to the upper recorded elevation of the pit. The upper fill [506], which was only 30mm thick, comprised a firm, very dark greyish brown clayey silt, and contained small fragments of CBM and mortar. The function of neither pit was clear.
- 7.9.5 If both of the ditches were elements of an early attempt at reclamation, then this appears to have been a short-lived venture, ultimately ending in failure, as both features silted up and were sealed by further, reworked alluvial units. Ditch [535] was covered by a layer of loose, light to mid greyish brown clayey silt [466]. Ditch [555] was covered by layer [559], a deposit of soft, dark yellowish brown sandy silt, up to 0.20m thick and with a maximum surface elevation of +1.40m OD. Further to the west this was recorded as [550] (upper elevation +1.25m OD) and [533] (upper elevation +1.28m OD), which also overlay reworked alluvial deposit [529].
- 7.9.6 This latest phase of possible inundation appears to have been countered with the establishment of a formalised drainage system. The main element of this system was a large north-south aligned ditch [400], which was recorded along much of the lower step of the excavation area (also recorded as [468] and [486] towards the south). It was up to 2.90m wide and almost 1m deep. It had slightly convex to slightly stepped sides, sloping at c. 45°, and a narrow, flattish base (Fig. 10). The ditch appeared to have been cut from a level between +1.15m OD to +1.27m OD. The basal elevation varied between +0.26m

- OD to the north, and +0.54m OD to the south. This suggests that the ditch sloped downwards from south to north, which is counter to what would be expected for a drainage ditch following the natural topography. The nature of the slope remains somewhat enigmatic. The primary fill [532]/[547]/[516] was a stiff, light greenish grey sandy silt, up to 0.21m thick. This was overlain by a variably compacted, light greyish brown to light yellowish brown sandy silt [399]/[456]/[515], which in places included a high proportion of degraded lime mortar and ash. Finds recovered suggested a deposition in the late 16th to mid 17th century (suggesting these secondary fills should be correctly assigned to Phase 10), though later, intrusive material was also apparent in [456]. This was overlain by up to 0.32m of a soft, dark grey to black clayey silt [478]/[548].
- 7.9.7 A very soft, light brownish grey sandy silt [563], up to 0.20m thick was recorded in section as the primary fill towards the south. This was overlain by a thin layer of soft, mid grey sandy silt [561] to the east and a deposit of soft, light brownish grey sandy silt [562] to the west, which was up to 0.21m thick. Both of these deposits were sealed by up to 0.18m of a loose, dark grey sandy silt [560].
- 7.9.8 A number of smaller 'feeder' ditches were aligned perpendicular to the main drainage ditch and drained into it (Fig. 9). With one exception, all those recorded were located to the east of the main drain. The one exception was ditch [526], which drained into the main drainage channel from the west. Only a 1.15m length of the feature was recorded as it extended beyond the western edge of the excavation area. It was up to 0.32m wide and 0.59m deep, with near vertical sides and a flat base. The primary fill [525] comprised a soft, brown clayey silt, up to 0.27m thick. It contained no dateable finds and was overlain by up to 0.37m of soft, light brown clayey silt [524], which also contained no finds, but a backfilling contemporary with that of ditch [400] appears very likely.
- 7.9.9 To the east of the main drainage channel up to nine east-west 'feeder' ditches were recorded. The most northerly of these was ditch [458], which extended for up to 6.25m east of ditch [400]. It was up to 1.20m wide and 0.85m deep, with a basal elevation varying between +0.49m OD and +0.94m OD. It was apparently cut from a surface level varying between +1.26m OD and +1.40m OD. The sides initially sloped at c. 45° from the surface, before becoming vertical and breaking to a flat base. The primary fill of the ditch was a moderately compacted, light to mid greenish blue silty sand [517] up to 0.10m thick, which probably represented natural infilling. It was overlain by a 0.10m thick deposit of moderately compacted, dark brownish grey clayey silt [463]. This appeared to be quite organic-rich and also contained a small quantity of pottery and CBM. Above this was a

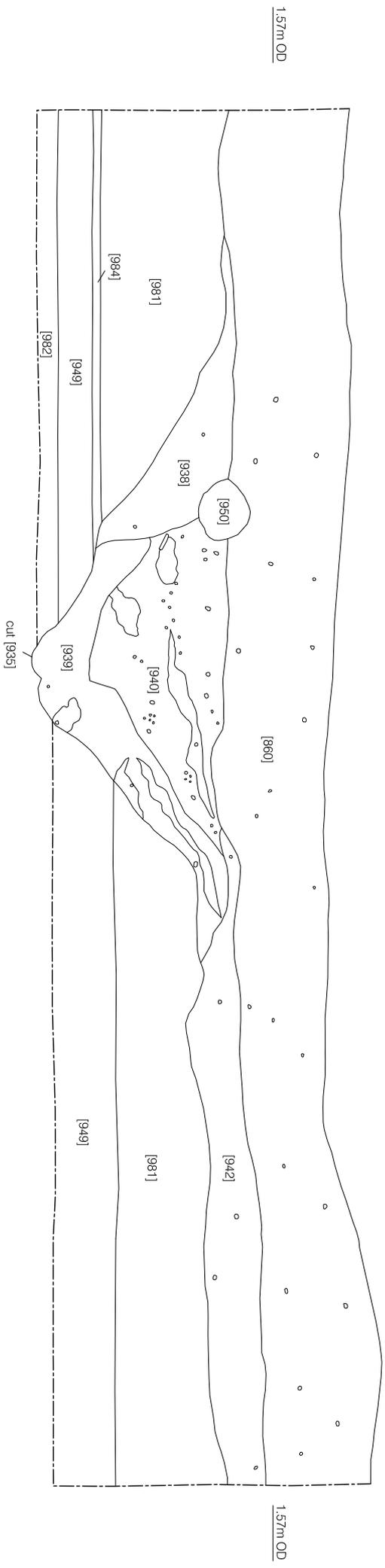
- layer of firm, light to dark grey sandy silt [457], up to 0.75m thick and also containing pottery and CBM, the former of which suggested a 17th century date (Phase 10) for this final infilling. A copper alloy pin (SF <10>) was also recovered.
- 7.9.10 A short distance to the south a small sub-circular feature [519] was recorded, which may have been part of another east-west drainage ditch, possibly even a recut of the earlier ditch [555]. It had steep sides and a concave base and was up to 0.35m wide and 0.18m deep, with a basal elevation of +0.71m OD. It was backfilled with a single deposit [518], which comprised a moderately compacted, mid greenish brown clayey silt, and contained a small quantity of CBM (broadly dated to c. 1630-1850, suggesting backfilling in a later phase) and leather fragments (SF <17>).
- 7.9.11 A short distance to the southeast of this, another section of east-west ditch [513] was recorded. This cut earlier pit [509] (Fig. 9) and had probably originally extended westwards to ditch [400], though only a 3.50m length survived to the east of this. It was up to 0.70m wide and 0.50m deep, with the basal elevation varying between +0.83m OD and +0.93m OD. It had an asymmetric profile, with a near vertical northern edge and a slightly concave southern edge, breaking to a concave base. The single fill [512] comprised a fairly compact and very sticky, mid to dark grey clayey silt that contained some pottery, dated 1600-1650 suggesting a later backfilling, and part of a worked bone object (SF <16>).
- 7.9.12 A little under 1.5m to the south was a narrow, east-west aligned linear feature [455]. This cut earlier pit [507] and was recorded for a length of up to 2.80m, but originally had probably extended as far west as ditch [400]. The feature was up to 0.40m wide and 0.20m deep, the basal elevation varying from +1.36m OD in the east to +1.28m OD in the west, suggesting it was a drainage gully that drained into ditch [400]. The single fill [454] was a soft, very dark greyish brown clayey silt, which produced a single sherd of intrusive later pottery.
- 7.9.13 A short distance to the south a 4.44m length of a further east-west aligned linear feature [472] was recorded. This was up to 0.45m wide and 0.70m deep, with the elevation of the gently sloping base varying between +0.72m OD to the east and +0.68m OD to the west. It had vertical sides and a flat base and had been timber-lined. The remains of three vertical wooden posts [474], [475] and [476] were recorded along the northern edge, and to the west, dark staining [477] probably represented the remains of wooden planking held in place by the posts. The feature was backfilled with a single deposit [471], which

comprised a loose, greyish brown sandy clay and contained further timber fragments. A group of seven postholes [494], [496], [498], [540], [542], [544] and [546], located to the south of the ditch, may have represented an associated structure, though no clear pattern or alignment was apparent. Immediately to the south, pit [537] may also have been contemporary. It was sub-circular in plan, with irregular sides sloping at c. 45° and had a gently concave base. It measured 1.10m north-south by 0.90m east-west and was up to 0.30m deep, with the basal elevation recorded as +1.00m OD. The single fill [538] comprised a soft, dark brown silty clay that contained small quantities of wood, metal, CBM and shell fragments. The function of the pit was unclear.

- 7.9.14 To the west, the alignment of feature [472] had a continuation in ditch [522], the two elements probably having originally formed a single feature that drained into ditch [400], though the recorded basal levels of [522] were slightly higher than those of [472]. Only a 0.68m length of [522] was recorded. It was up to 0.37m wide and 0.24m deep, with vertical sides and a flat base. No evidence of a timber lining remained and it was filled with a soft, brown sandy silt [521], which did not produce dateable finds.
- 7.9.15 Approximately 1.4m to the south of the eastern end of ditch [472] was a short length of a further east-west aligned feature [500], which may have been an eastern recut of the earlier ditch [535], that had been truncated by ditch [400] to the west. Only a c. 1m length of the feature remained, but the full width (up to 0.51m) and depth (up to 0.12m) were recorded. It had gently sloping, slightly concave sides and a gently concave base, the elevation of which, varied between +1.36m OD and +1.41m OD. It was backfilled with a single deposit [499], comprising a variably compacted, very dark greyish brown coarse silt that included quantities of anthropogenic material including pottery, broadly dated to 1580-1700 (suggesting a backfilling in the later part of Phase 10), CBM and metal finds, along with fragments of oyster shell, animal bone and timber were also present.
- 7.9.16 A short distance to the south was east-west aligned ditch [465], which may originally have drained westwards into ditch [400], though the 3.1m stretch recorded lay c. 3m to the east. It was between 0.30m and 0.44m wide and up to 0.34m deep. The basal elevation varied between +1.13m OD and +1.06m OD, the ditch exhibited a general downward slope from east to west. The sides were very steeply sloping and the base was slightly concave, becoming flat towards the west. The single fill, [464] was a variably compacted, mid greyish brown sandy silt, which contained various anthropogenic materials, including an iron knife (SF <12>) and CBM, though this may have dated to the 18th century or later.

E

W



Section 5
TBA03
North facing

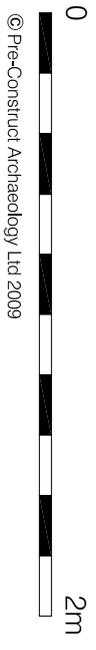


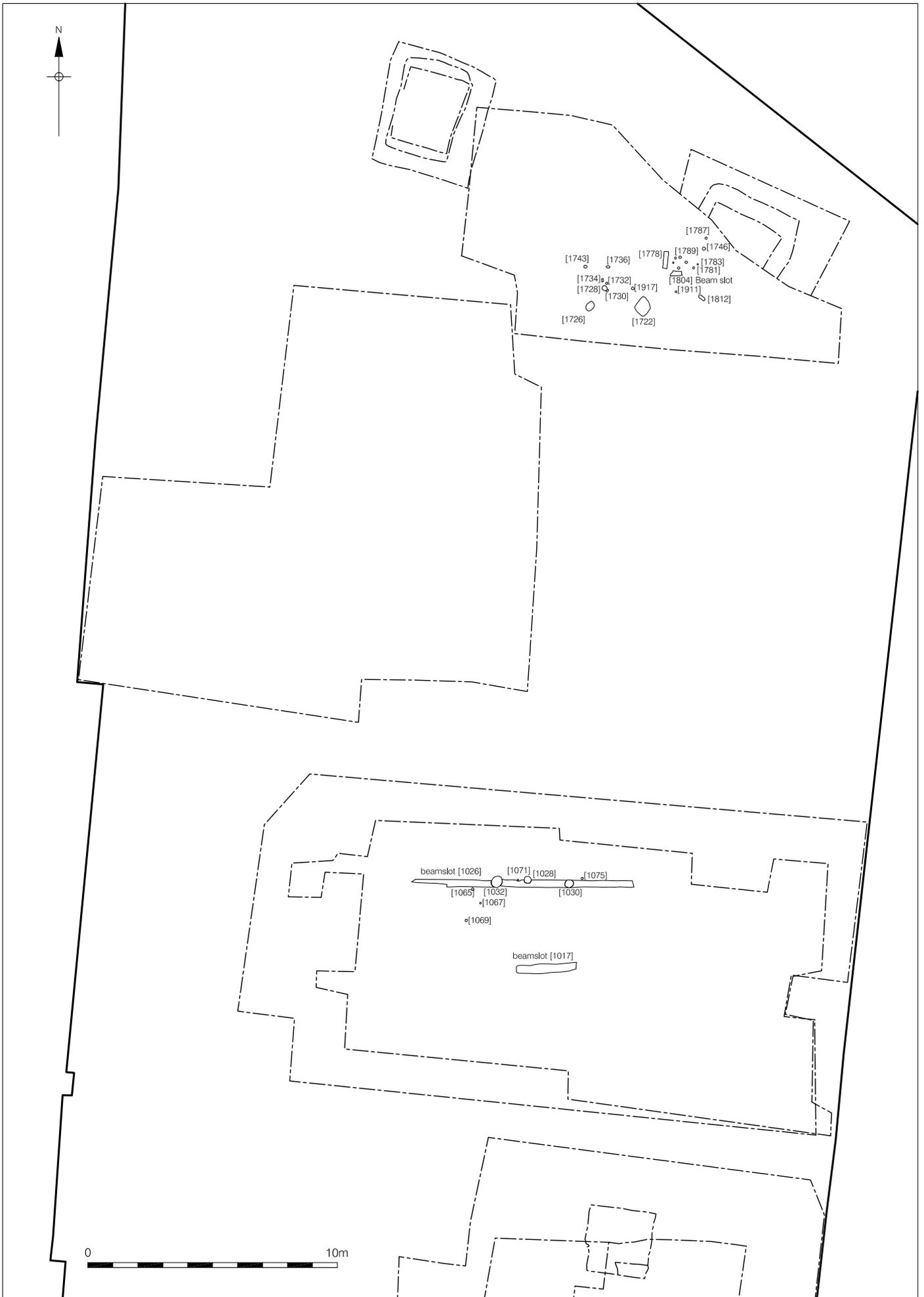
Figure 12
Section 5, TBA03
1:25 at A4

- 7.9.17 A little over 1.5m to the south was a short surviving section of another east-west aligned feature [578]. Only a 1.75m length survived but it probably originally drained into ditch [400]. It was up to 0.48m wide and 0.49m deep, with the basal elevation varying between +1.05m OD and +1.07m OD. The sides sloped steeply to a concave base. It was filled with a soft, mid brownish grey clayey silt [577], which contained frequent mortar fragments, along with a small CBM and pottery assemblage. This had been cut by a large, shallow, poorly defined pit [574], which had in turn been cut by another poorly defined pit [572]. The function of neither of these was apparent.
- 7.9.18 The southernmost east-west drainage ditch [576] was located approximately 2.3m to the south. A 2.30m length of this survived, which was up to 0.30m wide and 0.59m deep. The base exhibited a downward slope from +0.80m OD to the east to +0.74m OD to the west, and the ditch had probably extended westwards as far as ditch [400]. The sides were vertical and the base was flat, directly overlain by a 0.15m thick primary fill [581]. This comprised a moderately compacted, mid brownish grey and mid reddish brown clayey silt, which probably represented a natural silting up of the ditch. This was overlain by up to 0.20m of firm to moderately compacted, light grey clayey silt with reddish brown mottling [580]. The upper fill [575] was a moderately compacted deposit of mid grey clayey silt, up to 0.30m thick and containing small quantities of CBM and pottery.
- 7.9.19 Although the main north-south drain [400] and a small number of the east-west 'feeder' drains had partly silted up naturally, the majority of backfilling of all features was probably deliberate. Numerous different backfill deposits were recorded but they were probably mostly contemporary and related to a phase of ground raising and levelling following abandonment of the drainage network (See Section 7.10 below).
- 7.9.20 Evidence of attempts at drainage and land reclamation were also recorded in the excavation in Building 5 to the north. This area too appears to have witnessed earlier, abortive attempts at drainage, followed by the establishment of a more formalised drainage system. Possibly the earliest drainage element was located towards the eastern edge of the excavation area: Ditch [1050] was an east-west aligned feature, cut into alluvial deposit [1083]. It was only recorded over a distance of 1.20m as it had been heavily truncated by later activity. It was therefore impossible to establish any definite relationships with contemporary features. The ditch was up to 0.67m wide and 0.31m deep, having been cut from an apparent surface level of +0.89m OD. It had an asymmetric profile, with a near vertical southern edge and the northern edge sloping at c.

45°. The base was flat. The primary fill [1052] was a very soft, mid yellowish brown silty sand, up to 0.10m thick, which appears to have represented natural infilling. This was overlain by up to 0.11m of soft, mid brown clayey silt [1051]. The upper fill of the ditch [1049] was a soft, light yellowish brown silty sand, up to 0.20m thick. None of the backfilling deposits produced any dateable finds.

7.9.21 More than 4m to the west of ditch [1050] was a NNE-SSW aligned ditch [1010], which extended for 9m from the southern edge of the excavated area, before being truncated by later features. The ditch was up to 1.20m wide and 0.25m deep, with the basal elevation dropping from +0.71m OD to the north to +0.43m OD to the south, having been cut from an upper elevation of between +0.65m OD and +0.82m OD. It had concave sides and a flat base. The primary fill [1015] was a 50mm – 100mm thick deposit of soft, grey silty sand, which appears to represent gradual, natural infilling. It was overlain by up to 0.25m of compact, mid greyish brown clayey silt [1009], which although containing a small quantity of animal bone and CBM, appears to have been deposited following inundation of the site by flood waters. This event clearly signalled the end of the drainage function of the ditch.

7.9.22 Following the inundation of ditches [1050] and [1010] a more formalised drainage system was established, evidenced in this excavation area by two main north-south aligned channels. The easternmost of these [935] traversed the whole excavation area, and truncated the backfilled ditch [1010] and appears to have been the northern continuation of channel [400] recorded in Building 1. Though unlike feature [400] it sloped downwards from north to south. The basal elevation at the northern end of channel [935] was +0.57m OD, just 30mm higher than the basal elevation at the southern end of channel [400]. The profile of cut [935] was slightly asymmetric, with the western edge being slightly steeper and straighter than the eastern one. It was up to 2.42m wide and 0.88m deep with a concave base (Fig. 12). The primary fill [938], which was only recorded on the eastern side of the ditch, was a soft, light grey sandy silt that included frequent charcoal flecks along with small CBM and mortar fragments. It was up to 0.40m thick and was overlain by a soft, mid grey sandy silt [939], which extended up the western side of the cut. The backfilling of the ditch was completed by deposit [940], a firm, light brownish grey silty sand with some lighter mottling. This was up to 0.58m thick and may have represented a deliberate backfilling episode.



7.9.23 Unlike the recorded drainage system in Building 1, there were no apparent smaller drains feeding into channel [935] from either the east or the west, though an east-west aligned ditch [936] truncated the partly backfilled channel and may have represented a later, *ad hoc* attempt at drainage. However, located a little over 7.5m to the west was a parallel channel, which extended the full width of the site from north to south, and had been recut on at least two occasions. Towards the northern edge of the excavation area the original cut [1117] was asymmetric in profile, the eastern edge being very steep and slightly convex, and the western edge being slightly convex and more gently sloping. The base was rather uneven, recorded at an elevation of -0.02m OD. Only the lower 0.42m and a 1.17m width of the feature survived because of truncation by later recuts. It was filled with a soft, plastic, mottled grey silty sand [1116]. The first recut [1125] cut through this material to a basal level of +0.18m OD. It was up to 0.43m deep but its original width was difficult to ascertain because of heavy truncation by the second recut. It was also difficult to ascertain the original profile, though the western edge was quite steep and slightly convex, and the base was generally flat. The basal fill [1124] was a soft, very dark grey sandy silt containing occasional wood fragments. It was up to 0.25m thick and was overlain by [1123], a 0.20m thick deposit of thin, variably coloured, sandy silt and silty sand lenses. The upper fill [1122] was up to 0.20m thick and comprised a soft and friable, very dark grey sandy silt. The second recut [1012] was at least 2.22m wide at the northern edge of the site, and 0.52m deep, cut from an apparent upper elevation of +0.79m OD. The sides were slightly uneven, sloping at c. 45° to a base that was also uneven. The primary fill [1121] was a soft, plastic, dark brown silt containing occasional wood fragments. It was up to 0.10m thick and was overlain by layer [1120], which had been deposited from the western side of the ditch. It was up to 0.24m thick and comprised a soft, spongy, very dark brown grey sandy silt, containing occasional fragments of wood and other rotted organic material. It was overlain by a soft, plastic, very dark grey silt [1119], up to 0.12m thick. Radiocarbon dates of 1020-1250 cal AD (Waikato-12983) and 1030-1260 cal AD (Waikato-12984) suggest this material contained an element of redeposited medieval peat. The upper fill was [1118], a soft, plastic, very dark grey sandy silt.

7.9.24 A single feature [1062] was recorded at the northern edge of the site, which appeared to be a 'feeder' drain for channel [1012]. This was aligned approximately NW-SE and was located to the west of the main drainage channel. It was only partly exposed within the excavation area but appeared to be at least 0.70m wide and 0.45m deep. The primary fill

- [1111] was up to 0.30m thick and comprised a plastic, very dark grey silty clay. It was overlain by [1063], a plastic, dark brown clayey silt, up to 0.45m thick.
- 7.9.25 Towards the southern edge of the site the original channel cut was recorded as [1014] and had an asymmetric profile with a very gently sloping, slightly concave eastern edge, and a straight western edge sloping at c. 45°. The base was generally flat. It was up to 1.32m wide and 0.45m deep, the basal elevation at the southern edge of the site being measured at -0.13m OD. It was not possible to establish what level it had been cut from as it was recut. It was backfilled with a firm deposit of very dark grey silt [1013], which included a number of sandy silt lenses. Frequent animal bone and smaller quantities of CBM, pottery (dated 1480-1600) and slag were recovered.
- 7.9.26 Only one recut was recorded at the south side of the site. This was channel [1012], which was recorded as the second recut to the north and extended across the full width of the site. At the southern edge the profile was asymmetric, with a very gently sloping, slightly convex western edge, and a more steeply sloping, convex eastern edge. It was 3.30m wide and 0.58m deep. The base was slightly concave, its elevation recorded at -0.02m OD. Only a single fill [1011] was identified. This comprised a firm, very dark greyish brown silt, with occasional sandy silt lenses, and included a number of anthropogenic materials including pottery (dated mid to late 16th century), struck flint, CBM and metal fragments.
- 7.9.27 No further 'feeder' drains were recognised in the Building 5 excavation area, and in common with the pattern recorded in Building 1, following an initial, natural infilling of some features, the remainder was deliberately backfilled with various materials in order to level the area. A north-south aligned ditch [51] recorded in Trench 2 of the initial evaluation, close to the site northern boundary was interpreted as a possible northern continuation of drainage channel [400]/[935]. It was at least 1.20m wide and 0.98m deep, cut from a level of at least +1.75m OD. However, finds from the various backfills suggested later dates of deposition than in the ditches to the south, so whilst its excavation may have been contemporary with those to the south, it remained open until a later date.
- 7.9.28 The evidence for an early post-medieval drainage network within the Building 6 excavation was rather more limited. Towards the southeast corner of the area an east-west linear feature [1497] was recorded. This extended westwards for 1.70m from the eastern edge of the site, before being truncated by a later feature. The sides of the cut

sloped at a c. 45° angle, with a gradual break to a concave base. It was 0.65m wide and 0.23m deep, recorded at an upper level of +1.01m OD. The single fill [1496] was a hard, mid greyish brown silty sand. What appears to have been the same feature was recorded continuing to the west of the later truncation. Here it was numbered [1569], a 1.12m length surviving, 0.56m wide and 0.51m deep, with an upper elevation of +1.09m OD. The fill here [1568] was a compact, mid greyish brown silty sand. The feature sloped downwards, and therefore drained, from east to west; the base of [1497] was at +0.77m OD and the base of [1569] at +0.58m OD. Ditch [1497] was partly truncated to the south by a squarish posthole [1495] with near vertical sides and a flat base. It measured 0.40m by 0.40m and was 0.16m deep. It was filled with a friable, mid brownish grey sandy silt [1494], which produced small assemblages of pottery, glass and CBM (which may have been intrusive). No related features were identified and the nature of the feature and its accurate phasing remain unclear (it may have been later than suggested here).

7.9.29 Some 3.5m north of [1497] a segment of another east-west aligned linear feature [1468] was seen. This extended for 1.47m before being truncated by a later feature. It was 0.55m wide and 0.29m deep, at an upper elevation of +1.07m OD. It was filled with a soft, mid brownish grey sandy clay silt [1467]. It continued to the west of the truncation as [1493], just a 0.77m long segment of which survived. It was 0.76m wide and 0.45m deep, at an upper elevation of +1.15m OD. It was filled with a soft, mid brown silty sand [1492]. The base of [1468] was at +0.75m OD and that of [1493] at +0.69m OD, again suggesting that the feature drained from east to west. A heavily truncated pit [1470] was located a short distance to the north of ditch [1468], though because of the truncation the relationship between the two was unclear. The pit appears to have been sub-circular in plan with moderately sloping, concave sides and a flattish base. It measured at least 0.49m north-south by at least 0.46m east-west and was 0.12m deep, at an upper elevation of +1.26m OD. It was filled with a friable, very dark greyish brown sandy clay [1469], which contained abundant fragmented, butchered animal bone. The pit extended beyond the eastern edge of excavation and may have been associated with activity in the unexcavated area. It may have been associated with tanning in a later phase but its position in the overall site stratigraphy was unclear because of the extent of truncation.

7.9.30 A substantial north-south aligned ditch [1826] was found in the Gatehouse excavation, and appears to have been the northern continuation of the drainage features seen in Buildings 1 and 5. Ditch [1826] traversed the whole of the Gatehouse excavation area and extended to the north and south (7.10m+). It was up to 2.20m wide and 0.70m deep. It had gently sloping sides and a concave base, at a lowest level of +0.57m OD. The

primary fill [1825] was a compacted, mid brownish grey clayey silt, up to 0.40m thick. It included occasional pottery, burnt Kimmeridge Shale, CBM (dated as Tudor/early post-medieval), bone and also a copper alloy jeton (TBB03 sf <18>), but no clay tobacco pipe was present. Cut into the primary fill on the eastern edge of the ditch was a sub-rectangular pit [1907], with near vertical sides and a flat base. It measured 0.44m north-south by 0.36m east-west and survived to a depth of just 90mm, the base being recorded at +0.89m OD. It was filled with a soft, mid grey sandy silt [1906]. It was believed by the excavator that the pit originally housed a plank setting that was part of a structure that allowed the ditch to be crossed during a secondary phase of use. The secondary fill of the ditch [1824] was a 0.12m thick deposit of variably compacted, very dark grey, charcoal-rich sand. Above this was the upper fill [1823], comprising a variably compacted, dark greyish brown silty clayey sand, up to 0.55m thick, which included abundant building rubble (dated as Tudor/early post-medieval), burnt Kimmeridge Shale and finds including pottery and animal bone. Close to the eastern edge of the Gatehouse excavation was another north-south aligned linear feature [1920] though only a 1.6m length of this was present within the excavated area. It was 0.75m wide and up to 0.45m deep, with gently sloping sides and a concave base, which was measured at + 0.72m OD. It was filled with a firm, mid brownish grey silty sand [1919], which contained residual Roman CBM as well as possible intrusive material. The southern end of the ditch was truncated by a sub-circular pit [1924], up to 0.80m in diameter and 0.50m deep. It had steeply sloping sides and a concave base, at +0.62m OD. It was filled with a firm, light to mid brownish grey silty sand [1923], which included residual Roman CBM, bone and an iron spur (SF <21>). The function of the pit remains unclear.

7.10 PHASE 10: POST-MEDIEVAL CONSOLIDATION; c. 16th – 17th Centuries (Figure 13)

7.10.1 The various ditches and channels associated with the Phase 9 drainage system recorded in Buildings 1 and 5 appear to have been deliberately backfilled, probably in one phase of rapid activity. This was done presumably because the drainage system had served its purpose; the area had become de-watered and the ground surface could now be prepared for other activities. Following the backfilling of the various elements of the drainage systems in the southern half of the site, there appears to have been widespread ground raising, levelling and consolidation, particularly in the area of the Building 1 excavation.



- 7.10.2 Initially a number of materials appear to have been laid down as dumping and levelling deposits. Towards the southeast of the excavation area a friable, very dark greyish brown silty sand [570], containing apparent industrial debris was deposited and over this a brick and mortar rubble layer in a loose, light brownish grey sandy clay matrix [569] was laid. This included early post-medieval brick, along with pan tile fragments and the upper elevation was at +1.55m OD. A short distance to the north, ditches [465] and [500] and the postholes associated with ditch [472] were covered in a layer of loose, mid grey silty clay [461] (upper elevation +1.48m OD). A little further to the north ditches [455] and [513] were covered by layer [462], a moderately compacted, very dark greyish brown silty clay, containing frequent building rubble fragments at an upper elevation of +1.60m OD. Further to the west, infilled drainage channel [400] was superimposed by a firm, dark brownish grey silty clay [441] (upper elevation +1.50m OD) and [440] (upper level +1.25m OD).
- 7.10.3 Limited evidence of dumping and levelling was recorded in other areas. In TP1 and TP2 in the Building 3 watching brief a 0.40m thick deposit of firm, black sandy clay silt [208]/[213], containing CBM and mortar fragments was present. It had been heavily truncated in TP1 but survived to an upper elevation of +1.57m OD in TP2. As such it is not clear whether it represented just an initial, post-drainage consolidation deposit, or if it was added to on later occasions. At the northeast corner of the site, in Trench 1 of the initial evaluation, a loose, mid greyish brown silty sand [20] was deposited. This included fragments of building rubble and further flecks of mortar and charcoal. It was between 0.10m and 0.15m thick and was at an upper elevation of +1.23m OD. In the northwest corner of the Gatehouse excavation, dumped deposit [1889] comprised a firm, mixed, greenish and reddish brown sandy clay silt with yellow lenses. It contained frequent charcoal and chalk flecks, along with bone and CBM fragments, broadly dated to c. 1650-1800. It was between 0.10m and 0.20m thick and was an upper level of +1.37m OD.
- 7.10.4 Following the deposition of these various materials a more widespread, homogeneous layer was put down as a general levelling deposit in the area of Building 1. This was generally a clinker-rich and comprised a number of different contexts across the site. Towards the southeast corner it was recorded as [363]/[430], a friable, very dark greyish brown clinker (upper elevation +1.62m OD). Further to the north it was [433], a loose, very dark greyish brown clinker (upper elevation +1.59m OD). Further to the west it was [528], a weakly cemented, dark grey to black sandy silt (upper elevation +1.53m OD) and [514], a loose, black clinker. Although this deliberately laid material was present across

much of the Building 1 excavation area, it was absent in the other areas investigated. However some comparable deposits were found elsewhere. In Trench 1 of the initial evaluation, dumping and levelling deposit [20] was overlain by a mixed lime mortar and charcoal deposit with brick fragment inclusions [19]. This was up to 0.35m thick and was found at an upper elevation of +1.46m OD. The presence of a late 19th century silver knife (SF <32>) in this deposit suggests significant disturbance at a later date. In Buildings 5, 6 and the Gatehouse such a consolidating surface deposit had either been removed by later truncation or the ground surface created by backfilling of earlier features and levelling was sufficient for further activity to take place.

- 7.10.5 In Building 5 there was limited evidence of structural activity towards the end of this phase. The eastern side of backfilled ditch [1012] was truncated by a linear feature [1026], which extended eastwards for 8.70m. It was up to 0.30m wide, 0.16m deep and at an upper elevation of +0.84m OD. It had near vertical sides and a concave base, and three postholes [1028], [1030] and [1032] and two stakeholes [1071] and [1073] were cut along its length. Together the features have been interpreted as a beamslot and features which formerly held structural timbers. Nearby post/stakeholes [1065], [1067], [1069] and [1075] may also have been associated. If these features were associated with some type of building then it appears to have extended beyond the northern edge of the site as few further elements were identified to the south, within the excavated area. A parallel linear feature [1017] located a little over 3m to the south may have been related but only produced finds of prehistoric date.
- 7.10.6 In the gatehouse excavation there were a number of small features that may have been associated with structural activity during this phase. On the eastern side of backfilled north-south ditch [1826] was a group of nine stakeholes, [1746], [1781], [1783], [1787], [1789], [1791], [1909], [1915] and [1913], which may have represented a small temporary wooden structure here, though it is unclear what this may have been. Directly to the south of the group was a heavily truncated, east-west aligned linear feature [1804]. Only a 0.45m length of this survived, which was 0.28m wide and just 80mm deep. It had vertical sides and a flat base and was interpreted as a possible beamslot, and it may therefore have been a structural feature associated with the stakeholes. Lying at 90° to this and extending for 0.64m to the north was a further feature [1778] also interpreted as a beamslot. This was 0.18m wide and 0.17m deep with steeply sloping sides and a flattish base, recorded at +0.79m OD. It appeared to have evidence of scorching at the edges, suggesting the burning of a beam *in situ*. It was filled with a moderately compacted, mid grey clayey silt [1777]. If all of these features were related then the stakehole group may

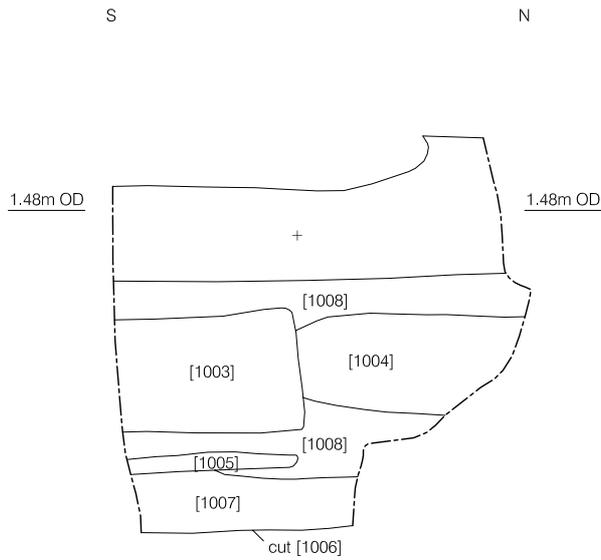
have represented a small structure in the southeast corner of a larger square or rectangular structure represented by the two possible beamslots. A further stakehole [1911] lying approximately 1m to the south may also have been associated, as may sub-rectangular posthole [1812] lying a short distance east of this. To the west and cut into the backfilled ditch was another group of small features [1743], [1736], [1734], [1732], [1728], [1730] and [1917], all of which, apart from [1728], appeared to have been stakeholes. Cut [1728] was a slightly larger, oval feature and was interpreted as a posthole. Together the features may have been part of a small rectangular structure, though if such a structure existed its function remains unclear. A short distance to the southwest of this group, and also cut into the backfilled ditch, was a small, sub-circular pit or posthole [1726]. This measured up to 0.38m in diameter, but survived to a depth of just 0.10m. It had steeply sloping sides and a flat base, recorded at +0.89m OD. It was filled with a soft, mid greyish brown sandy silt [1725]. This feature may have been a further element of the possible structure, or it may have been an isolated small pit of unknown function. A further pit [1722] lying c. 1.6m to the east may have been another contemporary feature. This was sub-rectangular in plan, with steeply sloping sides and a relatively flat base, recorded at +0.74m OD. It measured 0.52m NW-SE by 0.52m NE-SW and was 0.15m deep. The fill [1721] was a moderately friable, dark grey sandy silt. The function of the feature was unknown.

7.11 PHASE 11: POST-MEDIEVAL INDUSTRY 1; c. 17th – 18th Centuries (Figure 14)

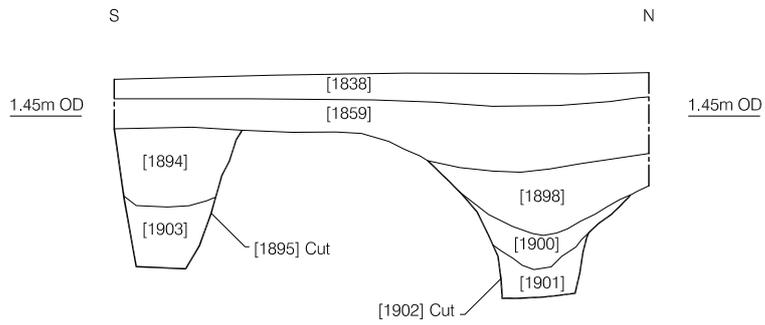
7.11.1 Following the early post-medieval consolidation of the land, evidence of industrial activity was prevalent in a number of the areas excavated. Initially this was dominated by processes associated with the tanning industry, which appear to have developed over a number of phases. The earliest apparent activity of this nature in Building 1 was represented by a series of pits located towards the centre of the excavation area, though heavily truncated by a later, north-south aligned wall footing [238]. Towards the south of the lower excavated area and to the west of the wall footing was a large rectangular pit [447], apparently cut from a level of between +1.48m OD and +1.31m OD. It measured 4.1m north-south, extended 0.45m to the west of the wall footing, and was up to 0.55m deep. It had near vertical sides and a flat base. The pit was filled with a soft, light grey clay [431]. Cut into the western edge of this were three pits, which essentially utilised [431] as an impermeable lining to their edges. The southernmost pit [398] was sub-circular in plan, with near vertical sides and a flat base. It measured up to 1.20m in diameter and was 0.50m deep. Its fill [397] was a loose, light grey, mortar-rich sandy silt, which included fragments of pottery, glass (dated to the late 17th to 19th century), CBM and clay tobacco pipe (dated 1680-1710). A short distance to the north was sub-circular

pit [429], which also had near vertical sides and a flat base. It was up to 1.05m in diameter and 0.45m deep. It was filled with a soft, mid to dark grey, mortar-rich clayey silt [428], which included fragments of pottery, CBM (broadly dated to c. 1630-1850) and clay tobacco pipe (dated 1680-1710). The northernmost pit [396] was circular in plan with vertical sides and a flat base. It measured up to 1.10m in diameter and was 0.42m deep. The fill [395] comprised a soft, light brown, mortar-rich sandy silt, which included fragments of pottery (dated 1630-1680) and CBM (dated to c. 1660-1800). The pit had been truncated to the west by a later linear feature [417] (pottery from the fill of [416] suggests this could be as late as 19th century), which was up to 0.6m wide and extended for 0.80m to the west before itself being truncated by a modern intrusion. The function of the feature was unclear.

- 7.11.2 The pits were clearly contemporary and linked with one another, having all been deliberately located within the larger pit [447]. However, their original function was not clear though it is assumed they were associated with an early phase of tanning, or some other leather preparation related industry. Large pit [447] appears to have continued to the east of the wall footing as cut [470], though it was very heavily truncated in this area and no further internal pits were recorded. If [447] and [470] were one and the same feature then a pit measuring at least 4.1m north-south by 2.8m east-west is suggested.
- 7.11.3 Immediately to the north of pit [447]/[470] and slightly truncating its northern edge, was a smaller, sub-rectangular pit, recorded as [394] to the west of the later wall footing, and [390] to the east. This measured approximately 2.4m east-west by 1.3m north-south and was up to 0.45m deep. To the west it had steep sides and a slightly concave base, exhibiting traces of a wooden lining. To the east the sides were vertical and the base was flat, with no evidence of any wooden lining. To the west a single fill [393] was recorded, which comprised a moderately compacted, dark greyish brown silty clay, which included fragments of pottery, CBM (dated to c. 1630-1850) and clay tobacco pipe. To the east, a primary fill [389] was a firm, mid grey clayey silt, which appears to have been a lining for the pit. The pit was backfilled with a friable, dark greyish brown, clinker-rich sandy silt [361], which included a large quantity of pan tiles (broadly dated c. 1630-1850), fragments of pottery and glass (dated 17th – 18th century), along with two gun flints. Again the original function of the pit was unclear but it was probably associated with tanning or a related industry.



Section 6
TBA03
East facing



Section 31
TBB03
East facing



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Figure 15
Section 6, TBA03
Section 31, TBB03
1:25 at A4

- 7.11.4 Immediately to the north of pit [394] was a further small pit [412]. This had been extensively truncated by the later wall footing, but appears to have been sub-circular. It measured at least 0.64m in diameter and was at least 80mm deep. Its fill [411] comprised a loose, mid brownish black, clinker-rich clayey silt. The function of the pit was unclear but appears to have been associated with the features to the south.
- 7.11.5 less than 1m to the north of pit [412] was a large, sub-rectangular pit [427], either side of footing [238]. It measured approximately 2.50m east-west by 2.44m north-south and was up to 0.46m deep, having been cut from an apparent upper elevation of +1.40m OD. It had vertical sides and a flat base, and was backfilled with a firm, mottled grey and brown clay with occasional sand [426]. It included fragments of pottery (dated 1670-1700), clay tobacco pipe (dated 1660-1680) and frequent animal bone. Two fragments of wood from the southeast corner may have been the remnants of a lining. This pit also appears to have been associated with an early tanning industry.
- 7.11.6 A sub-circular pit [408] was cut into the southwest corner of the backfill. It had vertical sides and a flat base, was 0.40m deep and measured up to 0.94m in diameter. It was filled with a moderately compacted, dark grey clayey silt [407], which included fragments of pottery and CBM. This feature was also probably associated with the early tanning industry, though its exact function could not be ascertained.
- 7.11.7 A little over 1m to the east of pit [427] was a sub-circular feature [405], with moderately sloping sides and a gently concave base. It measured up to 1.30m in diameter and was 0.29m deep. The single fill [404] comprised a friable, dark purplish brown and mid brownish grey, slag and cinder-rich clayey silt. It contained fragments of pottery, glass and CBM. This was not a tanning pit but its original function may have been associated with the nearby tanning activity. Immediately to the north was a small pit or posthole [392]. This was sub-circular in plan, with gently sloping sides and a slightly concave base. It was up to 0.60m in diameter but just 0.10m deep. It was filled with a friable, light grey, fine sandy lime mortar [391], containing occasional pottery fragments (dated 1550-1700). Its function remains unclear. Some 4m to the northeast was an isolated small circular posthole [331]. It had near vertical sides and a tapered base, and measured 0.17m in diameter and was 0.20m deep. It was possibly part of a wooden structure that extended into the unexcavated area to the east.

- 7.11.8 Two timber box drains also appear to have been contemporary with this phase of activity and possibly associated with tanning processes. The first of these comprised a north-south cut [460] running along the western edge of the earlier drainage channel [400]. It had variably sloping sides, a flat base, was up to 0.38m wide and a 3.5m length survived. It had become backfilled with a thin deposit of soft, dark brown clayey silt [459]. A timber box drain [450] had been inserted into the cut. This was formed by horizontal and vertical oak planks, giving an approximately square profile, though much of the upper horizontal planking had decayed or collapsed. The drain appears to have been constructed prior to being inserted into the ditch as the vertical timbers were attached to the base by nails hammered from the underside of the base plank. The drain had become backfilled with a loose, reddish brown sandy silt [527]. No dateable finds were recovered from any of the elements of the drain.
- 7.11.9 The second box drain was located further to the east and aligned NE-SW. It comprised a linear cut [446], 0.16m wide and 0.20m deep, surviving over a length of up to 4.04m. It had vertical sides and a flat base. A pre-fabricated box drain [445] was placed in the cut. This was of very similar construction to drain [450], though it appears to have been manufactured from pine rather than oak. It had become backfilled with a loose, mid brownish grey silty clay [444]. No dateable finds were recovered from the drain.
- 7.11.10 In Building 5 a number of features were identified to the north of beamslot [1026], which may have been later internal elements within the tentative structure. To the north of the western end of the beamslot, and also cutting backfilled ditch [1012] was a large, sub-rectangular pit [1057], measuring 3.2m east-west by at least 1.7m north-south and 0.75m deep. This was recorded at an upper elevation of +0.75m OD and exhibited near vertical sides and a flat base. It was lined/filled with a variably compacted, dark bluish grey to mid brown clayey silt [1056], into which, two sub-circular pits were cut. The western pit [1002] measured at least 1.05m in diameter and was 0.65m deep, with near vertical sides and a flat base. It had a wattle lining [1001] recorded in two broad bands, one towards the base of the cut and the other towards the top of the feature. The pit was backfilled with a soft to slightly firm, very dark bluish grey and light greyish blue, coarse silty sand [1000], which contained fragments of pottery, CBM (including a dump of post-medieval peg tile and bricks of an earlier post-medieval date) and clay tobacco pipe (dated 1660-1680), along with abundant animal bone. The eastern pit [1043] measured at least 1.14m in diameter (having been heavily truncated to the west) and it was 0.60m deep. It had vertical sides and a flat base and like its neighbour contained a wattle lining [1042]. This was less substantial than that in pit [1002], being just three withies wide and located towards the

- base of the feature. The pit was backfilled with a soft, mid brownish grey sandy silt [1041], which contained fragments of pottery, CBM and clay tobacco pipe (dated 1660-1680), along with occasional fragments of animal bone.
- 7.11.11 Directly to the west of pit [1057] was a sub-circular feature [1059], measuring up to 1.50m in diameter and 0.80m deep, at an upper elevation of +0.75m OD. It had near vertical sides and a flat base and was filled with a soft to friable, light greenish grey to dark greyish blue silty sand [1058]. Cut into this was a circular pit [1046], measuring 1.20m in diameter and 0.55m deep, with near vertical sides and a flat base. It contained a wattle lining [1045], similar to those recorded in the two pits to the west. In this case the lining comprised two broad bands, each three withies wide, with a single wooden plank located on the base of the feature. It was backfilled with a soft, very dark grey sandy silt [1044], which contained a moderate assemblage of animal bone, including a partially articulated horse skeleton, and CBM broadly dated to c. 1600-1900. The features in this area have all been interpreted as possible tanning or tawing pits.
- 7.11.12 Located towards the southeast corner of Building 5 was a further contemporary pit [1024]. This was circular in plan with vertical sides and a flat base. It measured 1.50m in diameter, 0.48m in depth and was at an upper elevation of +0.99m OD. It was lined with a barrel [1023], the preservation of which improved with depth, and included a wooden base, thus discounting any ideas that it may have been a barrel well. A moderately compacted, light greyish yellow silty sand [1022] had been packed between the barrel and the edge of the cut to give an overall rigidity to the feature. The primary fill of the barrel was a moderately compacted, light greyish yellow silty sand [1021], up to 0.12m thick. This was overlain by a more substantial deposit of loose, mid brown grey sandy silt [1020], which contained abundant building rubble (including pan tiles and bricks in Flemish fabric 2318) and animal bone, particularly cattle horn cores. Having discounted the likelihood that the structure was a well, it seems probable that it was another feature associated with tanning or tawing.
- 7.11.13 Towards the southeast of the lower excavated area in Building 1 there was structural evidence, probably contemporary with the later end of this phase. The eastern side of pit [470] was truncated by a north-south aligned construction cut [415], the northern 1.6m of which survived. It was 0.80m wide and up to 0.12m deep, with gently sloping sides and a flat base. A narrow wall [410] had been constructed within the cut. It comprised unfrogged red bricks (fabric 3033, c. 1750-1850), bonded with a mid to dark brown sandy mortar. Two courses of brickwork survived. The construction cut was backfilled with a friable, mid

grey silty sand [414]. This was partly overlain by a loose, mid to light grey mortar-like deposit [480]. This, along with a loose, mid yellowish brown sandy mortar deposit [413] appeared to be a bedding layer for an overlying floor. This floor [409], located to the east of wall [410], was constructed from unfrosted red bricks and survived over an area measuring c. 1.86m north-south by 0.50m east-west. It was at a surface elevation of between +1.50m OD and +1.56m OD. A little over 2.5m to the south a further fragment of contemporary floor [385] survived. This also comprised unfrosted red bricks, including moulding and voussoir bricks (broadly dated to c. 1750-1850), bonded with a soft, very dark grey sandy mortar. It covered an area measuring 2.60m north-south by 1.80m east-west and the surface was between +1.61m OD and +1.65m OD.

7.11.14 A squarish pit [386] was cut into this floor. It measured 2.10m north-south by 2.05m east-west and was up to 0.29m deep. It had very steep, straight sides and a flat base, and staining within the cut suggested that it had originally been timber-lined. The pit had been backfilled with a friable, mid grey sandy silt [388], which included fragments of pottery and clay tobacco pipe, along with a small quantity of animal bone, burnt Kimmeridge Shale, tile and Anthracite coal. It also included fragments of wood, probably also derived from the timber lining, and a number of nails, which originally held the lining in place. The backfill was overlain by a 0.13m thick deposit of friable, light grey mortar [387]. It appeared that this may have been deliberately deposited to form a level surface with the surrounding floor [385]. This fragmentary evidence thus suggests a possible building that was contemporary with an early phase of tanning activity, and may have had a related industrial pit cut into its floor. A later phase of use saw this pit backfilled but the floor surface level still utilised, before the whole building went out of use.

7.11.15 Following this initial phase of post-medieval industrial activity there appears to have been a possible hiatus as backfilling of features and cessation of use of the possible building was followed by the deposition of a number of dumping deposits. Pits [408], [427], [405] and [392], posthole [331] and floor [409] were overlain by up to 0.25m of soft, dark grey clayey silt [370], which also covered a large proportion of the eastern side of the excavation area. This appears to have been a deliberate levelling deposit and contained numerous finds, including fragments of pottery, glass, CBM and clay tobacco pipe. It was recorded at an upper level varying between +1.52m OD and +1.87m OD. Further to the north a firm, dark grey silty clay [453] was present over an area c. 6.20m east-west by 3.40m north-south. This was up to 0.30m thick and was overlain by [337], a variably compacted, mid to dark brownish grey silty clay. The surface of this was at between +1.85m OD and +1.90m OD. These appear to have been further made ground deposits,

contemporary with layer [370]. Towards the southeast of the excavation area, a small area of firm, light greenish grey clay [484] up to 0.10m thick was found. This was overlain by a moderately compacted, very dark grey, clinker-rich silty clay [501], up to 0.26m thick and at an upper elevation of +1.50m OD. These layers appear to have been further fragmentary evidence of deliberate deposition and levelling, contemporary with layer [370].

7.11.16 In Building 5 a number of the early features associated with the tanning/tawing industry were sealed by a soft, dark bluish grey sandy silt [981]/[996]/[1061], which appeared to be re-deposited alluvium used for ground raising and levelling. It was at upper elevations varying between +0.95m OD and +1.16m OD. This was truncated by a small number of features. In the northeast corner of the excavated area was a heavily truncated, east-west aligned linear feature [1054], a 2m length of which, survived. It had gently sloping sides and a slightly concave base. It was 0.50m wide and at an upper level of +1.19m OD. It was filled with a soft, light to mid grey silty sand [1053], and truncated to the north along its length by a second linear feature [1037]. This was at least 0.26m wide (the northern edge being located beyond the northern limit of excavation), and at least 0.25m deep, with steeply sloping sides though the base was not reached within the excavated area. It was filled with a moderately compacted, mid to very dark brown clayey silt [1036]. It was interpreted by the excavator as a possible wall foundation cut, but appears more likely to have been a drainage feature. It was truncated by a sub-circular posthole [1019], which had tapering sides and a pointed base, measured 0.20m in diameter and was 0.04m deep. It was filled with a firm, mid to very dark brown clayey silt [1018]. No related features were identified and it is likely to have been part of a structure that extended beyond the northern limit of excavation.

7.11.17 A further east-west aligned drainage feature was identified at the southern edge of the Building 5 excavation area. Extending westwards across the site for 4.6m from the southeast corner (and clearly continuing beyond the eastern limit of excavation), was a 0.40m wide gully [1040]. It had near vertical sides and a flat base, was up to 0.60m deep, and was recorded at an upper elevation of +1.24m OD. It appeared to slope gently downwards from west to east. The primary fill [1039] was a moderately loose, predominantly greyish yellow clayey sand, up to 0.20m thick. This was overlain by a more substantial deposit of moderately compacted, predominantly mid bluish grey clayey silt [1038], which contained occasional pottery and CBM fragments (dated to c. 1700-1900) along with a moderate animal bone assemblage.

7.11.18 Towards the western edge of Building 5 a north-south aligned timber drain was exposed in two locations. In the northerly section a 1.65m length of linear cut [995] was recorded at an upper elevation of +0.96m OD, which had moderately sloping, slightly concave sides and a gently concave base. It was 0.85m wide and 0.22m deep, with a 0.10m thick primary fill [994], comprising a soft, very dark grey clayey silt with reddish brown mottling. Lying on this deposit was a wooden drain formed from hollowed out logs [993] and [992], tapered at one end so that each could be inserted into its neighbour. The cut was backfilled with a soft, dark bluish grey sandy silt [991] that included fragments of pottery (dated 1620-1700), CBM (dated to c. 1630-1800) and clay tobacco pipe (dated 1700-1740). A little under 2.5m to the south a north-south linear cut [1006] was exposed at an upper elevation of +0.53m OD. This contained a primary fill [1007] comprising a moderately firm, dark brownish grey, organic-rich clayey silt, up to 0.19m thick. Lying on this was horizontal wooden planking [1005], which was overlain by two sections of hollowed out log drain; the southern tapered end of [1004] was inserted into the northern end of [1003] (Fig. 14-15). The cut was backfilled with a moderately loose, dark greyish brown sandy clayey silt [1008], which contained abundant building rubble. The same drainage feature was clearly exposed in the two locations and it appeared to slope downwards from north to south (basal levels of +0.68m OD and +0.41m OD recorded for [995] and [1006] respectively). The feature appeared to run on an approximately parallel, though more westerly alignment to the wooden box drain [450] recorded in Building 1 to the south.

7.11.19 These features were subsequently sealed by substantial dumping and levelling deposits. Extending across much of the excavated area was a soft, dark brown to grey clayey silt [901]. This was up to 0.40m thick, at an upper elevation of +1.91m OD, and appears to have been a comparable layer with layer [370] and the other levelling deposits in the Building 1 excavation. In southwestern and south central areas of Building 5 layer [901] was also identified as [933] (upper level +1.82m OD) and [916] (upper level +1.95m OD). Layer [916] was subsequently overlain by up to 0.20m of friable, dark grey silt [915] (upper level +2.13m), and a further layer of friable, dark grey silt [914]/[860] (upper level +2.30m OD). Drains [995] and [1006] were actually sealed by [990], a slightly friable, very dark grey silty sand, up to 0.30m thick (upper elevation +1.25m OD) and including Delftware tile fragments. This was overlain by a friable, light brownish grey silty sand [989] (upper elevation +1.63m OD).



7.11.20 In Building 6 the Phase 9 drainage ditches and other features located towards the eastern edge of the excavation area were truncated by a very large pit [1288], which measured c. 13m north-south by 3.17m east-west and was 0.80m deep. It was rectangular in plan, with rounded corners. The sides were near vertical and the base generally flat, cut to a lowest level of +0.33m OD. The upper recorded elevation was +1.28m OD. The primary fill of the pit was a friable, very dark greyish brown silt [1540], up to 0.20m thick. Cut into this were a number of east-west aligned beamslots, with a further three parallel features located to the north of pit [1288]. The most northerly slot [1431] was located at the northern edge of the excavation area and extended for 3.90m across the site. It was up to 0.45m wide and 0.40m deep, at a basal elevation of +0.99m OD, with slightly convex sides and an uneven base. It was filled with a soft, light brownish grey silty clay [1430]. Approximately 1.2m to the south was slot [1418], which was 3.87m long, 0.31m wide and 0.29m deep, its basal level was at +0.84m OD. It had very steeply sloping sides, becoming vertical, and a flat base. It was filled with a soft, light greyish brown sandy silt [1417]. Located a little over 0.5m to the south was slot [1433], which was 4.85m in length, 0.26m wide and 0.23m deep, with the basal elevation at +1.00m OD. It had near vertical sides and an uneven base. The fill [1432] comprised a soft, light brownish grey silty clay.

7.11.21 Located a little less than 2m to the south of slot [1433] was the most northerly of the beamslots within pit [1288], which like all of the slots within the pit, had suffered extensive central truncation, such that either end was recorded separately. To the west a 1.69m surviving fragment of the slot was recorded as [1425], which was 0.31m wide and 0.20m deep, at a basal elevation of +1.01m OD. It had very steep sides and a slightly concave base. It was filled with a soft, light greyish brown sandy silt [1424]. A little under 3m to the east a further 1.33m segment of the feature was [1536], which was 0.24m wide and 0.22m deep, with a basal elevation of +0.99m OD. The fill [1535] was a moderately firm, mid brownish grey sandy silt. Approximately 0.75m south of slot [1425] was the second of the beamslots within pit [1288], recorded at this western side as [1427]. A 1.33m segment of this survived, which was 0.31m wide and 0.24m deep, with a basal elevation of +0.94m OD. It had very steep sides and a slightly concave base, and was backfilled with a soft, light greyish brown sandy silt [1426]. A 1.33m long eastern segment of the feature was [1538], which was 0.28m wide, 0.45m deep and at a basal elevation of +0.97m OD. It was filled with [1537] a moderately compacted, mid greyish brown sandy silt. The third internal beamslot was located a little over 1m to the south. A 1.16m long segment to the west was recorded as [1429]. This was 0.29m wide and 0.26m deep, recorded at a basal

elevation of +0.93m OD. It had very steep sides and a concave base and was filled with a soft, light greyish brown sandy silt [1428]. A little over 3m to the east a further segment of the feature was recorded as [1476]. This was 1.40m long, 0.35m wide and 0.26m deep, at a base level of +1.00m OD. It had steep, slightly concave sides and a slightly concave base, and the backfill [1475] comprised a soft, mid brownish grey sandy silt with orange flecking. Located almost 2.5m south of slot [1429] was the western segment of a fourth beamslot [1491], a 1.12m length of which survived. It was 0.21m wide, 0.12m deep and the base was recorded at a lower level of +0.96m OD. A 1.47m long segment of the same feature was recorded to the east as [1545], which was 0.23m wide, 0.10m deep and with a basal elevation of +0.93m OD. It had near vertical sides and an undulating base, and was filled with a soft, mid greyish brown sandy silt [1544]. The southernmost of the beamslots within pit [1288] was located less than 0.5m to the south. A 1.06m long western segment was [1489], which was 0.26m wide and 0.11m deep, at a basal elevation of +0.95m OD. It had near vertical sides and a flat base, and was filled with a soft, mid to light greyish brown sandy silt [1488]. A 0.94m long eastern segment was [1547], which was 0.33m wide and 0.10m deep, with the basal elevation recorded at +0.92m OD. It had near vertical sides and an uneven base, and was filled with [1546], a soft, mid greyish brown sandy silt. Although pit [1288] extended to the south, no further internal beamslots were identified.

7.11.22 Pit [1288] was backfilled with a series of mixed deposits containing abundant building rubble, including Delftware tile fragments [1287]. The excavator interpreted pit [1288] and its associated features as remnants of tanning pits. Feature [1288] itself was interpreted as a large foundation cut, into which a number of smaller tanning pits were cut. It is suggested that the beamslots represented the only remaining evidence for wooden frames or tanks within the pits. Unlike contemporary and later examples such as those in Building 1, these structures were deliberately removed leaving only the beamslots as evidence of their existence. The foundation cut then became backfilled, predominantly with building rubble.

7.11.23 Towards the northern edge of the Building 6 excavation area, beamslots [1431] and [1418] were partly truncated by a sub-rectangular pit [1291]. This measured 2.25m east-west by 2.23m north-south and was at least 0.40m deep, at an upper elevation of +1.35m OD. It was not fully excavated but appeared to have very steeply sloping sides. Its single fill [1290] was a soft, light grey sandy silt. No finds were recovered and the function of the pit was unclear, though may have been associated with tanning. To the southeast, beamslots [1536] and [1538] were truncated by a squarish pit [1534], which had vertical

sides and a flat base. It measured 1.30m east-west by 1.30m north-south, and due to heavy truncation only the basal 0.17m survived (basal elevation +1.07m OD). In the base of the pit was a firm, mid bluish grey silty sand [1533], which contained residual Roman CBM. Lying on this was badly decayed timber planking [1532], which appeared to be the basal lining of a possible tanning pit, inserted into larger pit [1534]. Further to the southwest the backfilled large pit [1288] was partly truncated by a sub-circular pit [1416], which measured up to 1.25m in diameter but survived to a depth of just 0.10m (basal elevation +1.07m OD). It had steeply sloping sides and a flat base, and was backfilled with a soft, dark grey sandy silt [1415]. Cut into this was a rectangular pit [1293] with vertical sides and a flat base. It measured 1.39m north-south by 0.90m east-west and was 0.52m deep (basal elevation +0.71m OD). It was filled with a single deposit [1292], which comprised a soft, mid grey sandy silt, and included small assemblages of pottery (dated 1770-1780), glass and clay tobacco pipe, along with an 18th century coin (TBB03 sf <1>), an ivory-handled iron knife, also 18th century in date (TBB03 sf <7>), and a curtain ring (TBB03 sf <2>). This was interpreted as another possible tanning pit.

7.11.24 Immediately to the west of pit [1288] though located at a lower elevation was a series of timbers, which appeared to have been elements of a more substantial structure [1453]. The structure comprised a number of east-west aligned 'baseplates' [1435], [1440], [1444], [1447], [1451] and [1454], along with their supporting uprights [1436], [1437], [1441], [1442], [1445], [1446], [1448], [1449], [1450], [1452], [1455], [1456] and [1462]. Other upright posts [1438], [1439], [1461], [1463] and [1464] may also have been associated with the structure, as may possible 'baseplates' [1443] and the north-south aligned [1434]. Sub-circular pits [1503], [1505], [1507] and [1551] may also have been related. In total, a structure (or structures) measuring at least 7m north-south (there was probably a continuation beyond the northern edge of the excavation area) by c. 2.5m east-west, appears to have been represented. The structure group was interpreted by the excavator as being the possible remains of a series of tanks linked with the tanning industry. The features were covered by a thin layer of friable, very dark grey brown silty sand [1481], which included fragments of vitrified kiln furniture and was at an upper elevation of +1.20m OD. Two further uprights [1465] and [1466] to the east of the group may have been supporting posts associated with timbers in beamslots [1425] and [1427] cut into pit [1288].

7.11.25 Towards the southwest corner of Building 6 was a further group of east-west aligned beamslots. The most northerly of these [1270] was at least 3.13m long (it extended beyond the western edge of the excavated area), was 0.60m wide and 0.45m deep, the

basal elevation recorded at +0.63m OD. It had a slightly asymmetric profile, with the northern edge being vertical and the southern one being very steeply sloping and slightly concave. The base was concave. It was filled with a moderately compacted, light to mid brownish grey silty clay [1269], which contained traces of decayed wood. Located approximately 1m to the south was slot [1268], which also extended beyond the western limit of excavation. A 2m length of the feature was present within the excavated area, which was 0.46m wide and 0.45m deep, the base being at +0.64m OD. It had vertical sides and a flat base, and was filled with a moderately loose, light brownish grey sandy clay [1267], which included frequent small mollusc shells and patches of decayed wood. A little less than 1m to the south was a third beamslot [1266], which extended for 3.88m onto the site from the western edge of excavation. It was 0.30m wide and 0.10m deep, with the base at +0.83m OD. The fill [1265] was a moderately loose, light brownish grey sandy clay, which again included patches of decayed wood. The fourth beamslot [1264] lay just under 1m to the south. It extended for 3.82m onto the site from the western edge of excavation, was 0.30m wide and 0.30m deep, with a basal elevation of +0.64m OD. It had vertical sides and a flat base, and was filled with a moderately loose, light brown grey sandy clay [1263], which included frequent ash and occasional patches of decayed wood. This was cut by an isolated posthole [1272], 0.26m in diameter and 0.20m deep, with vertical sides and a flat base. No finds were found in the fill [1271], and no associated features were identified. The group of beamslots were possibly the remnants of another area of tanning pits/tanks.

7.11.26 One or more of a small group of features directly to the northeast of beamslot [1270] may have been associated with the beamslots. The earliest of these features comprised a possible sub-circular posthole [1460], at least 0.18m in diameter (being extensively truncated and extending beyond the northern limit of excavation) and 0.10m deep. It had steep, irregular sides and a concave base, and was filled with a soft, mid greyish brown clayey silt [1459]. It was truncated to the west by an irregular pit [1458], which had 45° regularly sloping sides and a flattish base. It measured 0.93m east-west by at least 0.57m north-south (having extended beyond the northern edge of excavation) and was 0.18m deep. It was filled with a soft, mid greyish brown clayey silt [1457], which included a small 17th century pottery assemblage. Posthole [1460] was also cut by a heavily truncated north-south aligned linear feature [1234], which extended southwards for 1.10m from the northern edge of excavation and was 1.02m wide. It was 0.60m deep, recorded in section at an upper elevation of +1.32m OD, with moderately sloping, concave sides and a concave base. The basal fill was a thin deposit of firm, light yellowish brown sandy silt [1231], the only finds from which, were Roman in date. This was overlain by 0.11m of

firm, mid yellowish brown clayey silt [1232]. The upper fill [1230] was a firm, mid grey brown sandy clay.

7.11.27 The features in this area of the site were overlain by a deposit of loose, mid grey brown sandy silt [1153], up to 0.20m thick, with a maximum surface elevation of +1.13m OD. It was interpreted as a water-lain deposit, suggesting a temporary, isolated inundation of a small area of the site. This was truncated by a number of small pits and postholes. At the northern edge of the area and extending beyond the limit of excavation was irregular pit [1224], which measured 1.35m east-west by at least 1.20m north-south and survived to a depth of just 0.11m, the base level measured at +1.19m OD. The nature of the sides was difficult to ascertain because of heavy truncation but it appeared to have a concave base. It contained a single fill [1223], which comprised a moderately compacted, dark brownish grey, sandy clay silt. The function of the pit was unclear. A little over 1m to the southwest was a circular posthole [1210], with steeply sloping, concave sides and a slightly concave base. It measured 0.24m in diameter but only the basal 70mm survived, the base level at +1.21m OD. It was filled with a moderately loose, mid brown grey silty clay [1209], which contained CBM dated to c. 1700-1850. Approximately 1m to the south was a second posthole [1214]. It was sub-circular in plan, with near vertical sides and a flat base. It was up to 0.30m in diameter, 0.20m deep and had been cut to a basal level of + 1.11m OD. It was filled with a moderately loose, dark brownish grey clayey silt [1213] (which contained CBM dated to c. 1700-1850) and was cut to the south by a further posthole [1212]. This was sub-rectangular in plan with near vertical sides and a flat base. It measured up to 0.31m across and was 0.34m deep, having been cut to a basal level of +0.97m OD. It was filled with a moderately loose, dark brownish grey clayey silt [1211] that included CBM, broadly dated to c. 1700-1850 and occasional fragments of decayed wood. To the east of the latter two postholes were three small features. The easternmost of these was pit [1218], which was oval in plan, with steep, concave sides and an irregular base. It measured 0.67m east-west by 0.52m north-south and was 0.35m deep, with the basal elevation at +0.94m OD. The fill [1217] comprised a moderately loose, dark brown grey sandy silt, which contained a CBM assemblage, broadly dated to c. 1700-1850. Immediately to the west was a sub-rectangular posthole [1237], which had vertical sides and a flat base. It measured 0.30m north-south by 0.20m east-west and was 0.20m deep, having been cut to a lower elevation of +0.91m OD. It was filled with a moderately loose, dark brownish grey sandy silt [1236]. Both of these features were cut by a sub-rectangular pit [1216]. This had very steeply sloping sides and a flat base, and measured 0.70m north-south by 0.40m east-west. It was 0.20m deep, having been excavated to a basal level of +1.11m OD. It was filled with a moderately loose, dark brown grey sandy

silt [1215], which contained CBM, dated to c. 1700-1850. Immediately to the south of pit [1218] was another sub-circular posthole [1220], which had near vertical sides and a variable base. This was because a stake had been driven through the base in the southeast of the feature. The excavated base was 0.25m deep, but the stake had been driven in a further 0.20m. The posthole was up to 0.31m in diameter, whereas the stake only measured 0.10m across. The decayed remains of the stake were still in situ and the remainder of the posthole had been backfilled with a moderately loose, mid brownish grey clayey silt [1219]. Immediately to the southeast was a further posthole [1222]. This was also sub-circular in plan, with moderately sloping, concave sides and a concave base. It was up to 0.36m in diameter but only the lower 70mm of the feature survived, indicating that it had been excavated to a lowest level of +1.22m OD. The fill [1221] was a moderately loose, mid brown grey silty clay. With the exception of the larger pit [1224] this group was interpreted by the excavator being postholes associated with one or more structures. The nature of any structure(s) was unclear and further postholes may have been lost by truncation.

7.11.28 The features in this southwestern area of Building 6 were sealed by a number of dumping and levelling deposits. The first of these was a loose, mixed deposit comprising abundant building rubble, up to 0.50m thick [1152]. This was overlain by [1151], a 0.12m thick deposit of loose, bone-rich silt. The sequence was capped by a loose, very dark grey, ashy silt [1150], up to 0.15m thick and at an upper elevation of +1.68m OD. These materials appear to be comparable with the late Phase 11 made ground deposits in Buildings 1 and 5. Further to the east in Building 6 the various possible tanning pit remnants were also sealed by a number of made ground deposits. The earliest of these was [1253]/[1255], a soft, mid brownish grey sandy silt up to 0.27m thick. This was overlain by a moderately loose, mid to dark brownish grey sandy silt [1279]/[1280], recorded at an upper elevation of +1.83m OD. A poorly defined, north-south aligned linear feature was cut into this deposit, and the sequence for this phase was variably capped with a loose, mid brown grey, bone-rich sandy silt [1281], or a moderately compacted, crushed brick and mortar deposit [1282], both recorded at an upper elevation of +1.85m OD.

7.11.29 Surviving evidence for this phase of activity was rather limited within the Gatehouse excavation area, and restricted to the western side of the site. In the northwest corner of the excavated area was a heavily truncated, east-west aligned cut [1902] (Fig. 14, 15 section 31). A 3.15m long section survived within the excavated area, which was up to 0.75m wide and 0.49m deep, the basal elevation being at +0.85m OD. It had very steep

sides, which became near vertical with depth, and the base was flat. The primary fill [1901] was up to 0.20m thick and comprised a loose, light brown silty sand with yellow and red mottling. It was interpreted as natural infilling. Above this was 0.12m of moderately firm, dark brown clayey silt [1900], which appears to have essentially been a thin layer of heavily decayed wood. This was overlain by a 0.11m thick deposit of moderately compacted, light grey sandy silt [1899], which also appears to have been natural infilling. The upper fill [1898] was up to 0.24m thick and comprised a variably compacted light brown silty sand with red and yellow mottling. The feature was interpreted as a possible beamslot, with layer [1900] having been the remnants of a beam. A little over 0.30m to the south was a parallel gully [1895] (Fig. 14, 15 section 31). A 3m length of this survived, which was up to 0.20m wide and 0.35m deep. It had near vertical sides and a flat base, the level of which varied between +1.00m OD to the east and +0.95m OD to the west. The primary fill of feature [1903] comprised a friable, light yellowish grey sandy silt, up to 0.20m thick. It was overlain by up to 0.20m of loose, very dark grey brown, mortar-rich sand [1894], which contained CBM, broadly dateable to c. 1664-1800. Given the slope of the feature, it may have been a westwards draining gully, located to the south of a possible structure, or it may have been another beamslot.

7.11.30 Features [1902] and [1895] were both truncated by a north-south aligned cut [1880], which was seen over a length of 3.33m, extending beyond the northern limit of excavation, and had itself been heavily truncated by later activity. It was up to 0.86m wide and 0.16m deep with gently sloping, concave sides and a concave base, the base of which sloped down from +1.31m OD to the north, to +1.20m OD to the south. It was filled with a soft, mid to dark brown, organic-rich sandy silt [1879]. The feature appears to have been a southward draining gully and probably not a beamslot, as originally suggested by the excavator. At the northern edge of the excavation area the gully was partly truncated on its eastern side by a sub-circular small pit or posthole [1888], which measured up to 0.41m in diameter and 0.12m deep. It had steeply sloping sides and a flat base, at +1.27m OD. The single fill [1887] was a moderately firm, dark brown sandy silt. A short distance to the south was a larger sub-circular feature [1884], which measured up to 0.55m in diameter and was 0.24m deep. This too had steeply sloping sides and a flattish base, which was at +1.12m OD. It was filled with a moderately compacted, dark brown sandy silt [1883]. It is possible that the latter two features were both postholes associated with a structure that extended to the north of the excavated area. A short distance to the west of feature [1884] and partly truncating the western edge of gully [1880] was a sub-rectangular pit [1886], which had very steeply sloping sides and a flattish base. It measured 1.52m NW-SE by 0.93m NE-SW and was 0.19m deep, the basal elevation was

at +1.19m OD. It was filled with a moderately firm, dark brown sandy silt [1885], which contained small quantities of CBM (dated to c. 1664-1900) and "tanning waste". This may have been an isolated small tanning or tawing pit.

7.11.31 Towards the southwest corner of the Gatehouse excavation area was a group of generally heavily truncated and therefore poorly defined features, which may have been associated with one or more structures. The most northerly of these was east-west aligned ditch [1870]. It extended intermittently for up to 3.6m though it was heavily truncated along much of its length. It was up to 0.80m wide and 0.56m deep. The sides initially sloped at c. 60° to a depth of 0.22m and then became vertical to the base, which was flat, varying in elevation between +0.80m OD and +0.85m OD along its length but exhibiting no discernible slope. The basal fill [1877] was a firm, light grey clay silt, which filled the lower, vertical sided part of the feature and appeared to have been naturally deposited. Above this and forming a thin layer up either side of the cut was a moderately compacted, dark brown silt [1876], interpreted as slumping along the edges. This was overlain by up to 0.18m of loose, light grey to light orange sand with occasional silty lenses [1869]. Above this was a 0.10m thick deposit of variably compacted, mid brown sandy silt [1868], which included very frequent animal bone and charcoal, as well as CBM, broadly dated to c. 1664-1850. The infilling of the feature was capped by an intermittent layer of loose material [1867], up to 40mm thick. The feature may have been a beamslot but the extent of its truncation means its function was difficult to ascertain. A short distance to the south was a group of six features [1905], [1858], [1853], [1844], [1882] and [1893], which with the possible exception of [1844] appears to have been sub-circular postholes, measuring between 0.17m and 0.30m in diameter, and between 90mm and 0.28m in depth, though the upper levels of all features had been removed by truncation. Basal levels varied between +0.90m OD and +1.19m OD. The postholes may have been associated with one or more wooden structures or they may have formed a feature or features internal to a structure defined by beamslot [1870] to the north and further features to the south. To the east of the posthole group was a short surviving length of an east-west aligned linear feature [1873] but it had been so heavily truncated that it was not possible to ascertain its function.



7.11.32 Approximately 0.5m to the south of the posthole group was another east-west aligned linear feature [1850] that may have been another beamslot. A surviving length of up to 2.3m was recorded which was up to 0.90m wide and 0.36m deep. The sides were steep, becoming vertical and the base was flat, at between +0.98m OD and +1.01m OD. The primary fill [1864]/[1866] was a firm, mid bluish grey clay silt, just 60mm thick, which appears to have been a natural silting deposit, though it contained some intrusive CBM. This was overlain by a variably compacted, dark brown silt with yellow sand lenses [1865]. Immediately south of the beamslot was an apparent sub-rectangular posthole [1891], which measured 0.22m across and was 0.40m deep, with vertical sides and a flat base at +0.99m OD. Immediately south of this was another heavily truncated, east-west linear feature [1875]. Only a 1.70m length of this survived, which was up to 0.27m wide and 0.50m deep, with near vertical sides and a flat base, recorded at +0.75m OD. It was filled with a variably compacted, mid grey to yellowish brown, mixed clay silt and sand deposit [1874], which contained frequent mollusc shells and charcoal, as well as CBM, broadly dated to c. 1664-1850. The latter three features were all covered by a variably compacted, dark brown sandy silt [1862]/[1863], the surface level of which, varied between +1.19m OD and +1.40m OD. This in turn was overlain in places by a deposit of loose, mid greenish brown, slightly silty sand [1856], at an upper elevation of +1.36m OD. This was cut by a north-south aligned linear feature [1855], but had been so heavily truncated that its function could not be ascertained.

7.11.33 Further to the east a number of features may have been contemporary though because of truncation and the discontinuity of some deposits, their phasing is less secure. A short distance to the east of the possible Phase 10 structure represented by stakeholes and beamslots, was a sub-rectangular pit [1806], which had vertical sides and a generally flat, though slightly concave base. It measured 0.74m by 0.74m and was up to 0.21m deep, with the base at a lowest level of +0.79m OD, though a small depression in the base, which may have been part of the same feature extended down to +0.69m OD. The feature was filled with a loose, mid grey silty sand [1805], which contained frequent wood. This wood may have been the remnants of a lining and the pit may have been associated with tanning or tawing, though it was rather small for an immersion feature. A little over 2m to the south of the pit and close to the southern edge of excavation were two sub-rectangular postholes [1807] and [1809] (base levels at +0.91m OD and +0.88m OD respectively), which may have been elements of a wooden structure that extended to the south. A short distance to the west was a sub-rectangular small pit or posthole [1799], which may also have been associated, though it had not been excavated as deep as the

former two postholes. There may have been other contemporary features within this excavation area, but if so they went unrecognised as such because of the high levels of later truncation.

7.11.34 As was the case with the excavation areas further to the south, so in the Gatehouse there had been deliberate dumping and levelling of a number of deposits towards the end of Phase 11. The features in the northwest corner of the excavation area were sealed by a layer of moderately firm, dark brown sandy silt with green mottling [1859], which included abundant pan tile fragments, along with Tudor/early post-medieval bricks. It was recorded at an upper level of between +1.46m OD and +1.53m OD. In places this contained very frequent animal bone (also recorded as [1860] and [1861]). It was overlain by a variably compacted, light grey, mortar-rich sandy silt with green mottling [1838]/[1839]. This appears to have formed a temporary surface and was at an upper level of between +1.54m OD and +1.63m OD. This was cut by a single, sub-circular posthole [1795], up to 0.27m in diameter and 0.46m deep, at a basal elevation of +1.23m OD. No obviously related features were identified and following its backfilling the area was covered by a layer of variably compacted, dark brown sandy silt [1747], which contained abundant animal bone and was at an upper level of between +1.85m OD and +1.87m OD. It was also recorded as [1796] (upper level +1.93m OD) and further south as [1779] (upper level +1.66m OD).

7.11.35 Towards the southwest corner of the excavation a slightly different sequence of deposition was recorded. Layer [1863] was overlain by a deposit of firm, dark grey silty clay [1849] (which included a quantity of dumped pan tile fragments), at an upper elevation of +1.20m OD. Above this was a friable, mid grey, ashy, sandy silt [1848], the surface of which was at +1.22m OD. This was overlain by a friable, pale yellow sand [1847], which was in turn overlain by a firm, dark greyish brown sandy silt [1846], containing abundant large animal bones and at a surface elevation of +1.36m OD. This also overlay truncated linear feature [1873]. Above layer [1846] was a compact, pale yellow sandy mortar deposit, variably recorded as [1840], [1842], [1845] and [1871] and at an upper elevation of between +1.30m OD and +1.42m OD (this may have been comparable with temporary surface layer [1838]/[1839] recorded further north). The mortar surface was overlain by a variably compacted, mid brown sandy silt [1832] (which included a fragment of late medieval floor tile, and possibly also some later, intrusive material), at an upper elevation of +1.45m OD. This deposit was also recorded as [1831] and overlay the southern posthole group and linear feature [1870]. In this area it contained abundant animal bone.

7.11.36 Layer [1831]/[1832] was overlain by a number of further dumping deposits. The first of these was [1830], a layer of animal bone in a friable, mid brownish grey sandy silt matrix, at an upper level of +1.50m OD. Above this was an intermittent layer of friable, very dark grey, charcoal-rich sandy silt [1835], and overlying this was another intermittent layer [1834], comprising a friable, dark brown green clayey silty sand, at an upper elevation of +1.67m OD. Interestingly, this included a small fragment of stone with a mason's mark, which may have derived from Bermondsey Abbey. This in turn was overlain by [1833], a friable, mid grey, mortar-rich silty sand, which may have been a remnant floor surface. This was overlain by a further intermittent deposit of loose, mid to light pinkish brown sandy silt [1829], which included fragments of burnt Kimmeridge Shale and re-used peg tile. Above this was a thin layer of charcoal [1766]/[1767], which was overlain by a firm, dark greyish brown sandy silt [1755]/[1756], at an upper elevation of +1.67m OD and containing abundant animal bone. This appears to have been comparable with layer [1779]/[1796]/[1747] further to the north. The Phase 11 dumping/levelling in this area was completed by layer [1754]/[1768], variably recorded as a variably compacted light greenish grey sandy silt and a firm, mid greyish brown sandy silt, at an upper level of +1.67m OD. It was a mixed deposit and included some cessy material, but the upper levels were generally compacted and it appears to have functioned as an occupation surface.

7.12 PHASE 12: POST-MEDIEVAL INDUSTRY 2; c. 18th Century (Figure 18)

7.12.1 Following the secondary ground consolidation, further industrial activity took place across the site. Towards the northwest corner of the Building 1 excavation area large, irregular pit [377] was cut into the underlying clinker layer [528] from an upper level of +1.78m OD. This had variably sloping sides, a flattish base, was up to 0.50m deep and measured c. 3.60m east-west by c. 3.60m north-south. It was filled with a soft, dark greyish green, coarse gritty silt [369], which included fragments of building rubble (dated c. 1750-1850), along with fragments of pottery (dated 1580-1650) and glass. The function of the pit was unclear, though the excavator suggested it may have been a cess pit.

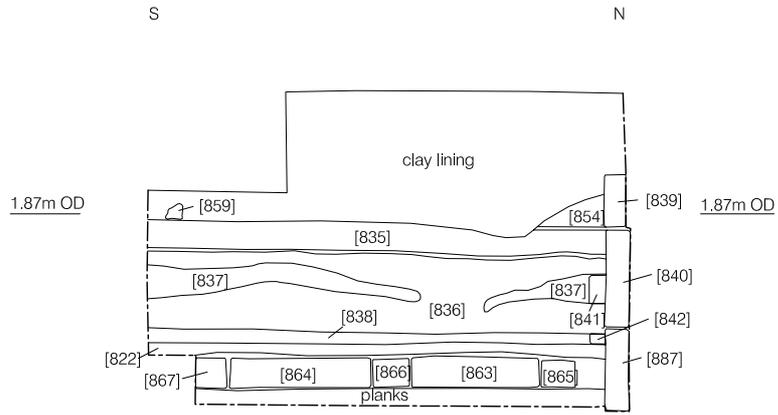
7.12.2 The backfilled pit was truncated to the east by a circular pit [284], which had mostly vertical sides and a flat base. It measured up to 1.90m in diameter and was 1.15m deep, having been cut from an upper elevation of +1.82m OD. The edge of the cut was lined with a 0.12m thick layer of soft and sticky, light grey silty clay [283]. A layer of decayed wood [316] in the base of the feature suggested that at least the floor of the pit had been timber lined. It was backfilled with a moderately compacted, dark grey, organic-rich

- clayey silt [311], which contained fragments of pottery, glass (dated late 17th to 19th century), CBM (dated to c. 1630-1800) and clay tobacco pipe (dated 1730-1780). This feature appears to have been a tanning or tawing pit and was located on a continuation of the alignment of the group of Phase 11 tanning-related features. It was, however, larger and better constructed than these features.
- 7.12.3 Also cut into the backfill of pit [377] was a smaller, sub-circular pit [368], which had steeply-sloping sides and a concave base. It was up to 1.25m in diameter, 0.55m deep and had been cut from an upper elevation of +1.78m OD. It was filled with a moderately compacted, dark bluish grey clayey silt [367], which included fragments of pottery and CBM (dated c. 1700-1850). This feature appears to have been too small to have been a tanning or tawing pit but may have been associated with a related process.
- 7.12.4 Both pits [284] and [368] were truncated by a sub-circular pit [323], measuring up to 1.24m in diameter and 0.48m deep. It had near vertical sides and a flat base, and was lined with a 30mm thick layer of clay. The base of the pit was timber-lined with a base plate comprising five wooden planks, which had the appearance of a barrel lid [334]. The sides of the pit were lined with a series of haphazardly-placed, horizontal, withie-like timbers, averaging 30mm wide and up to 1.20m long [326]. The primary fill of the pit [325] comprised a soft to moderately compacted, light grey, ashy sandy silty clay up to 0.10m thick. This was overlain by a substantial deposit of firm, light grey silty clay. This pit again appears to have been associated with some activity related to the tanning or tawing industry, but appears to have been rather small to have been a tawing or tanning pit.
- 7.12.5 Pit [323] was in turn, heavily truncated to the south by a larger pit [310]. This was sub-rectangular in plan, with steeply sloping sides and an irregular, though generally flat base. It measured 2.53m north-south, at least 1.44m east-west, having been truncated to the east by foundation cut [238], and was up to 0.82m deep. It had been cut from an apparent upper elevation of +1.80m OD. The pit was not lined and was backfilled with two differing deposits. The basal fill [309] comprised a firm, bluish grey silty clay, which appeared to include an element of redeposited alluvium and contained fragments of pottery, CBM and clay tobacco pipe (dated 1700-1740). It was up to 0.40m thick and was overlain by up to 0.45m of a variably compacted, light brownish grey silty clay [308], which included a small pottery assemblage, broadly dated to c. 1760-1830. The pit does not appear to have been directly associated with the tanning or tawing industries and its function remains unclear. Its western edge was partly truncated by a small, sub-rectangular pit [301], which had an irregular base and sides. It measured 0.72m east-

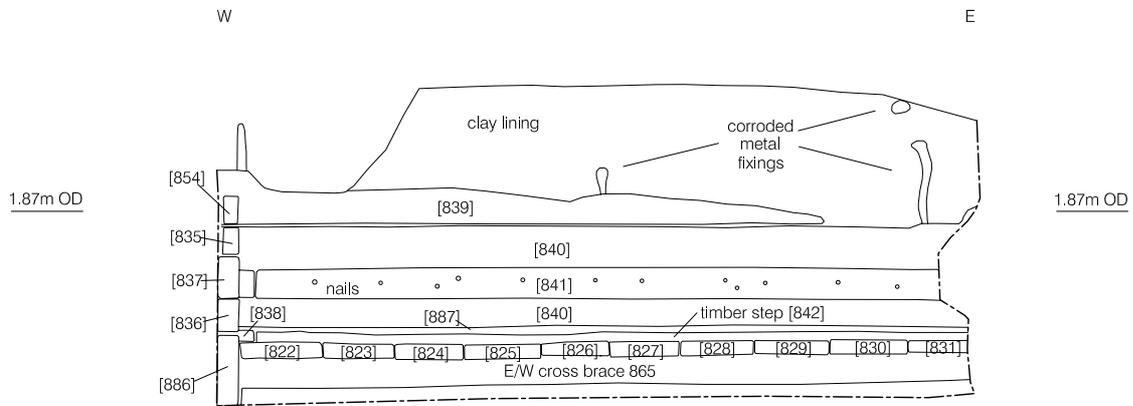
- west by 0.68m north-south and was just 0.15m deep. The single fill [300] was a moderately compacted, bluish black, clinker-rich silty clay, which appeared to have been material raked out of a fire or hearth. CBM from this deposit was dated c. 1750-1900. The original function of the pit was unclear.
- 7.12.6 A further feature that partly truncated large pit [377] was sub-rectangular pit [360], which had steeply sloping sides and a flat base. It was up to 0.51m deep and measured at least 0.86m north-south by 0.50m east-west, but had been heavily truncated to the north and west. It was filled with a soft, dark grey clayey silt [359], from which, a small pottery assemblage was recovered. Due to the extent of the truncation it was impossible to determine the function of the pit.
- 7.12.7 To the east of the above group of features, at the edge of the lower excavation area, was an elongated pit [365], which also appeared to have been contemporary with this phase of activity. It measured 1.18m north-south by 0.30m east-west and was just 0.14m deep. It had gently sloping sides and a flattish base, and was at an upper elevation of +1.80m OD. It was filled with a loose, mid greyish brown, mortar-rich clayey silt [364]. No dateable finds were recovered and the function of the pit remains unclear. A little over 1m to the southwest was a further contemporary feature. This comprised a sub-circular cut [307], with moderately sloping sides and a gently concave base. It measured up to 0.86m in diameter and was 0.28m deep, having been cut from an apparent upper elevation of +1.83m OD. The single fill [306] mostly comprised building rubble (dated c. 1630-1800), including a dump of post-medieval peg tile, within a mid grey silty matrix. A small quantity of pottery was also recovered, but the function of the pit remains unclear.
- 7.12.8 At the northern edge of the excavation area was a further feature dating to this phase of activity. This comprised an apparently rectangular pit [329], though it had been heavily truncated to the west, with straight, vertical sides and a flat base. It measured 1.90m north-south by at least 1.42m east-west and was 1.15m deep, having been cut from an apparent upper elevation of +1.85m OD. The basal fill was a 10mm thick, pale grey to yellow calcareous deposit [432], which appears to have been a residue derived from tanning. Fragments of wood were also recovered, which suggested the pit had originally been timber lined. The primary function of the feature therefore appears to have been as a tanning pit. However, material in later backfilling deposits suggested another industry located in the near vicinity. The earliest of these secondary fills [340] was a friable, mid brown grey sandy silty clay up to 1.15m thick and containing a quantity of building rubble (though this appeared to be 19th century in date!), clay tobacco pipe (see below) and

pottery (dated as 18th century). It was overlain by up to 0.38m of loose, very dark grey brown sandy silty clay [328], which contained CBM dated to c. 1630-1800. Both fills were deposited more or less contemporaneously as there were pottery sherd joins between the two deposits. What was significant was a large quantity of clay tobacco pipe fragments, particularly in deposit [340] (in excess of 2300 fragments dating to 1700-1740). A number of wasters was included as were fragments of furnace lining. A significant quantity of slag was also recovered from deposit [328], along with bricks, Flemish tile and a complete pan tile. The nature of the deposits strongly suggested they were waste products derived from clay tobacco pipe manufacture, carried out in the very near vicinity.

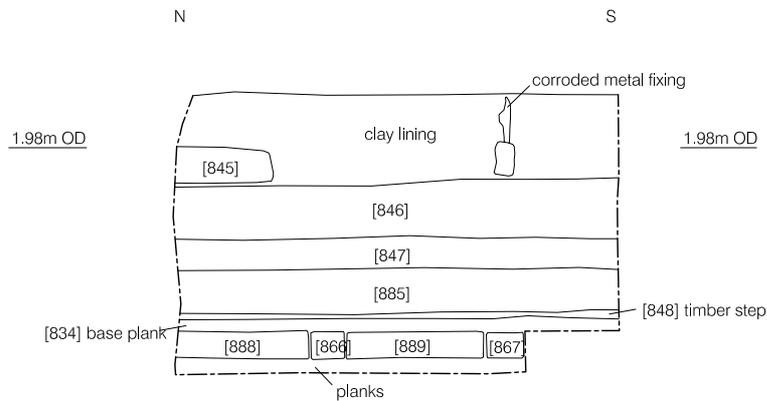
- 7.12.9 Probably the most significant activity carried out within the Building 1 excavation area during this phase, was identified towards the southwest corner of the site, where a small complex of tanning pits and associated features was located. The most extensive feature was a large rectangular pit [503], which measured 3.90m east-west by at least 3.50m north-south, and was cut into the clinker-rich levelling deposit [501]. It was at least 0.64m deep, recorded at an apparent upper level of +1.54m OD, though this represented the level to which the feature had been truncated, the original surface from which it had been cut was probably much higher. The pit was lined/filled with a firm, brownish, bluish grey silty clay [502]. Cut into this were six rectangular pits arranged in two east-west alignments. The northwesternmost pit [358] measured 1.36m north-south by 0.94m east-west and was 0.69m deep. It had vertical sides and a flat base and was lined with a pre-fabricated timber box structure [357], comprising horizontal planking around the sides and planks laid flat on the base. It was backfilled with a moderately soft, mixed greyish and yellowish brown and mid grey clayey silt [356], which contained abundant animal bones, particularly cattle horn cores, 17th – 19th century glass and 18th century CBM. To the east was pit [381], which measured 1.34m north-south by at least 0.34m east-west, having been heavily truncated by later construction to the west. It was 0.67m deep and again had vertical sides and a flat base. The remains of a heavily decayed timber lining [380] were recorded within the pit, and it was backfilled with a soft, mid brown to mid grey sandy silt [379]. A short distance to the east was a third rectangular pit [511], though only the southern 0.20m survived because of heavy truncation to the north. It measured 0.93m east-west and was at least 0.15m deep. The heavy truncation meant that it was not possible to ascertain the exact form of the pit, but in all probability its original form is likely to have been very similar to pits [358] and [381].



Section 2
TBA03
East facing



Section 1
TBA03
South facing



Section 3
TBA03
West facing



7.12.10 The southwesternmost pit [373] measured 1.36m north-south by 0.94m east-west and was 0.60m deep. It had vertical sides and a flat base and was lined with a timber box structure [372], similar in construction to lining [357] in pit [358]. The pit was backfilled with a soft, mid greyish brown sandy silt [371], which contained finds dateable to the late 17th to 18th century. To the east, though truncated along its western edge, was another pit [384], which measured 1.36m north-south by at least 0.80m east-west and was 0.69m deep. It had vertical sides and a flat base and contained the badly decayed remains of a timber lining [383], which originally had probably been a similar structure to ones recorded in other pits. A short distance to the east was the final pit in the group [376], which measured 1.34m north-south by 0.90m east-west and was 0.74m deep. It had vertical sides and a base that was flat, apart from a circular depression in the centre. This had probably originally been a further tanning pit, however it had been re-used for a secondary function. Within the cut was a wattle lining [375], above which, lay a 0.15m thick backfilling deposit [487], comprising a firm, dark brown to black, organic-rich silty clay. At the northern and southern ends of the pit this was overlain by a floor deposit [378], comprising two courses of bricks, half-bricks and occasional flint nodules. The pit was backfilled with a very soft, mid greenish grey sandy silt [374], CBM from which has been broadly dated to c. 1750-1900. This was interpreted by the excavator as a cessy deposit and it appears that this tanning pit had been re-used as a latrine.

7.12.11 Immediately to the east of large pit [503] was a second large, sub-rectangular pit [505], which measured at least 3.29m north-south by 1.07m east-west, and which had been truncated to the north and east. It was 0.47m deep and appeared to have had vertical sides and a flat base. It was filled/lined with a firm, greyish brown silty clay [504], into which had been cut a large rectangular pit [483], which measured 2.77m north-south by at least 0.63m east-west, having again been heavily truncated to the east. It had vertical sides, a flat base and was 0.47m deep, with at an upper elevation of +1.55m OD. The base of the pit was lined with a series of timber planks [482]. The primary fill was a 0.10m thick deposit of firm, bluish grey clayey silt [491]. However, final backfilling of the pit does not appear to have taken place until a much later date. The secondary fill [490] comprised a moderately compacted, mottled bluish grey medium sand, which appeared to have a quite recent origin. The original function of the feature appears to have been that of a tanning pit, though it was significantly larger than the examples immediately to the west.

7.12.12 Located less than 3m to the north of large pit [503] was another rectangular cut [333], which measured at least 3.35m east-west by 1.90m north-south and which had been

lined/filled with a deposit of clay [332], which was very similar to deposit [502] in pit [503]. Cut into this were a further three rectangular pits on an east-west alignment. The westernmost feature [437] measured 1.50m north-south by 0.82m east-west and was 0.52m deep. It had vertical sides and a flat base and was at an upper elevation of +1.58m OD. Within the pit was a well-preserved timber lining [436], comprising horizontal and edge on base planking and vertical corner posts. The pit had been backfilled with a soft, dark reddish brown to dark grey brown clayey silt [435], which contained fragments of pottery (dated 1720-1750), glass (dated to the late 17th to 19th century), CBM, slag and clay tobacco pipe (dated 1700-1740). Immediately to the east was pit [314], which measured 1.48m north-south by 0.84m east-west and was 0.50m deep, at an upper elevation of +1.52m OD. It had vertical sides and a flat base and contained a well-preserved timber lining [313], which was very similar to that in pit [437]. The primary fill of pit [327] was a very soft and sloppy, pale yellow white clay, which appeared to be a lime-based residue associated with tanning. It was also very smelly! Above this was a more substantial backfilling deposit [312], which comprised a loose, dark reddish brown to dark greyish brown clayey silt that contained fragments of pottery, glass (dated late 17th to 19th century), CBM, slag and tobacco pipe. The easternmost pit in the alignment [322] measured 1.52m north-south by 0.78m east-west and was 0.45m deep. It had vertical sides and a flat base and was at an upper elevation of +1.50m OD. Within the pit was a wooden lining [321] of very similar construction to those in the pits to the west, though in a rather more decayed state. The pit was backfilled with a loose, dark reddish brown to dark greyish brown clayey silt [320] that contained fragments of pottery, glass (dated to the late 17th to 18th century), CBM and clay tobacco pipe.

7.12.13 Located between large pits [503] and [333], and possibly cutting the southern edge of [333] was a further large, rectangular feature [319]. This measured 3.80m east-west by at least 1.45m north-south (having been truncated to the south by a later pipe trench), and was 0.83m deep. It was at an upper elevation of +1.61m OD and had near vertical sides and a generally flat base. There was no evidence of a lining to the feature and it was backfilled with a variably compacted, mixed orange and mid to dark grey sandy silt with a high proportion of building rubble [318]. A quantity of pantiles was also present, along with small assemblages of pottery and glass (dated 17th – 19th century).

7.12.14 The complex of features located towards the southwestern corner of the Building 1 excavation area were all associated with the tanning industry, and most, if not all, appear to have been used contemporaneously. The smaller rectangular pits located within the larger construction cuts [503], [505] and [333] were all originally timber lined and have

been interpreted as tanning pits. Their construction is of interest, as although they are described above in terms of the excavated stratigraphic sequence, their actual construction was probably somewhat different. The most logical construction sequence would appear to be as follows: Initially the large rectangular pits would be excavated as construction trenches. Pre-fabricated wooden frames (which formed the linings of the individual tanning pits) would then be placed (at regularly spaced intervals within trenches [503] and [333]) on the bases of the cuts. The space between the frames and between the frames and the edges of each cut would then be filled with clay in order to provide a lining to the construction cut and a secondary lining to each of the tanning pits. This would have resulted in consolidated areas within which, processes associated with the tanning industry could be carried out.

7.12.15 Possibly a slightly different activity appears to have been carried out during this phase within Building 5. A small complex of features was recorded at the southern edge of the excavation area. The earliest element of this was squarish pit [970], which had very steep sides and a flat base. It measured 0.90m east-west by 0.90m north-south and it was 0.35m deep, at an upper elevation of +0.98m OD. Though it had been heavily truncated and had originally been cut from a much higher level. Within the pit were the remains of an apparently wooden tank [968], comprising vertical stakes and horizontal planks. A moderately loose, mid brown grey silty clay [988] had been deposited between the tank and the edge of the cut. The tank had been backfilled with a moderately compacted, mid brownish grey silty clay [900]. It was subsequently heavily truncated by a possible replacement feature. This comprised a larger rectangular pit [908], which had vertical sides and a flat base. It measured 2.20m east-west by 1.60m north-south and was 1.05m deep, having been cut from an upper elevation of +2.00m OD. Within the pit was a group of timber planks [969], which may have originally derived from wooden tank [968] and may have been used for a later wooden structure within [908], though as excavated they lacked any structural integrity. The primary fill of the pit comprised a loose, dark grey brown clayey silt [987] up to 0.20m thick, from which, a knife of late 17th to early 18th century date was recovered (TBA03 sf <1>). Lying above this was the upper 0.1m of a barrel [986], 0.84m in diameter. This was overlain by a 0.10m thick deposit of loose, dark grey brown clayey silt [899], which contained a residual fragment of medieval glass. Resting on this was the base of a wooden barrel [898]. The primary fill of the barrel was a 0.20m thick deposit of well compacted, very dark brown grey clayey silt [897]. It was overlain by a more substantial deposit [896] of moderately compacted, mid to dark grey brown clay silt, that produced a small pottery assemblage (dated 1630-1700). Slotted into the western side of the barrel was an east-west aligned timber box drain [905], 0.25m

wide and 0.25m deep. This originally appears to have comprised nailed, horizontal and vertical, tangentially cut timber planks. It had become backfilled with a moderately compacted, mid brown grey clay silt [907], which produced a small pottery assemblage (dated 1580-1600).

7.12.16 Box drain [905] survived over a length of 0.67m to the west of barrel [898], before being truncated by more recent activity. However a further timber drain [1080] was recorded extending intermittently for almost 9m to the west and this may have been the same feature as [905], though its stratigraphic location appears less secure. The drain appears to have generally sloped downwards from west to east such that any fluids would have drained into barrel [898]. The western end of the drain was not exposed, so it was not clear where it was draining from, or what type of fluid was being transported. A little over 2.5m to the west of barrel [898], box drain [1080] appears to have been truncated by a circular well cut [1035], though this had itself been heavily truncated so the relationship was not certain. The cut was 1.40m in diameter and had vertical sides. The base was not seen as it was not fully excavated. The remains of a brick-built lining [1034] were recorded on the eastern side of the feature and this was overlain by a wooden capping, comprising seven horizontally laid timber beams [1033].

7.12.17 Two further features, apparently dating to this phase, were located towards the centre of the Building 5 excavation area. The larger and more westerly of these was a sub-circular pit [858] with near vertical, straight sides and a flat base. It measured up to 1.10m in diameter and 0.54m deep, and was at an upper elevation of +1.83m OD. It contained a single fill [857], which comprised a soft, very dark brownish grey silty clay that included abundant building rubble and a small pottery assemblage (dated 1760-1800). The function of the pit was unclear but may have been associated with the tanning/tawing industry. Located a little over 1.60m to the east was a circular small pit or posthole [862], which had vertical sides and a flat base. It measured 0.50m in diameter and was 0.50m deep, at an upper elevation of +1.86m OD. It was filled with a soft, very dark grey, organic-rich silt [861], the upper levels of which contained abundant cattle horn cores. A small assemblage of CBM (dated to c. 1700-1900), pottery and clay tobacco pipe was also recovered. Although interpreted as a posthole by the excavator, no more of such features were apparent in the near vicinity so it was not possible to define a structure to which it could be related. It may have been a small pit linked to tanning/tawing, indeed the presence of abundant horn cores in the fill suggests the processing of animal remains.

7.12.18 In the southeast corner of the excavation area was a layer of compacted, creamy to greyish yellow clayey silty sand [902], up to 0.28m thick and interpreted as an 18th century dumping deposit. It was truncated by a large pit [929], which appeared to be sub-circular in plan, but had been extensively truncated itself to the east and west. It measured at least 2.90m in diameter and was up to 1.70m deep, with near vertical, slightly concave sides and a generally flat base, at a lowest level of +0.36m OD. The pit was lined with a 0.11m thick deposit of pale yellow, concreted chalk and lime [926]. Overlying this was a 0.14m thick layer of soft, light greenish grey silty sand [925], with occasional patches of darker material, interpreted by the excavator as collapse from the side of the pit. This was overlain by a deposit of moderately compacted, mid to dark brownish grey sandy silt [924], which contained moderate quantities of pottery, CBM and animal bone. Above this was a more extensive layer of loose, mid to dark brownish grey sandy silt [928]. This was up to 1.23m thick and contained abundant quantities of waste material including pottery (dated 1740-1750), CBM, glass (dated as 17th to 19th century), clay tobacco pipe (dated 1700-1740) and animal bone. It is difficult to interpret the original function of this pit, and no such attempt was made by the excavator. It is possible, however, that it may have related to a phase of tanning activity.

7.12.19 This phase in Building 6 was attested by a number of features, representing activity across the excavated area. Towards the southwest corner of the area a heavily truncated, sub-rectangular pit [1165] was recorded. It measured 2.95m north-south by 2.35m east west, though only the basal 0.20m survived. It appeared to have vertical sides and a flattish base at +1.40m OD. It was filled with a loose, very dark grey, clinker and building rubble-rich deposit [1164]. Due to heavy disturbance it was difficult to ascertain the function of the pit, but an association with the tanning industry seems likely. Immediately to the east of this pit was a complex of features. The earliest of these was a north-south aligned linear cut [1286], which extended the full width of the site in this area (8m), was up to 1.60m wide and 0.50m deep, though was probably originally somewhat deeper than this. It was recorded at a basal elevation of +0.54m OD. It had moderately sloping, irregular sides and a flattish, irregular base, and appeared to slope downwards from south to north. A 50mm thick deposit of moderately loose, dark greyish brown clayey silt [1541] formed the primary fill in the base of the feature, but numerous features were cut into this. Towards the northern end of the recorded segment of the feature were the remains of a wooden structure [1583]. This comprised east-west and north-south aligned planks, positioned end on to form a rectangular structure. This would have measured at least 1.20m north-south by 1.05m east-west, though the full extent was masked by truncation and severe decay of the timbers. Set within the area enclosed by the timbers

was a group of at least sixteen postholes [1311], [1313], [1315], [1317], [1319], [1321], [1323], [1325], [1327], [1329], [1333], [1335], [1337], [1339], [1341] and [1343], arranged in an approximately rectangular pattern. These may have held supporting timbers for a rather more substantial wooden structure than that indicated by the surviving planks. The evidence for one or more timber structures here was interpreted as a further indication of features associated with the tanning or tawing industries in this area. In addition to this group of postholes towards the north of the linear feature, many more were recorded further south, particularly along the edges of the cut. Again it was thought that these represented a series of tanning frames/ tanks within the linear feature. The latter rather than being a drainage ditch, may have been a construction cut to house a tanning apparatus. Once all of these elements had gone out of use and the various cut features had become backfilled, the remainder of the linear feature became infilled with a moderately loose, dark greyish brown clayey silt, with sandy and clayey patches [1285]. This had survived to an upper elevation of +1.03m OD.

7.12.20 Located approximately 2m east of construction cut [1286], at the southern edge of the excavation area was a sub-rectangular pit [1474], which measured at least 1.65m north-south by 0.95m east-west. It was heavily truncated to the east and west by later features and extended beyond the southern limit of excavation. It was 0.48m deep, with a basal elevation of +0.26m OD. It had near vertical sides and a flattish, to slightly concave base. On the base of the pit was a 0.15m thick layer of what appeared to be predominantly white 'lime mortar' like material [1473]. This may have been the remnants of a lining for the pit, or may have been a residue produced by a process carried out within the pit, assumed to be associated with the tanning industry. Above this was the main backfilling deposit of the pit, a soft, bluish grey, sandy clayey silt [1472], which was up to 0.44m thick and contained CBM broadly dated to c. 1700-1850. The pit was truncated to the east by a sub-rectangular pit [1480], which had near vertical, though slightly concave sides and a flattish base. It measured 1.60m east-west by 1.50m north-south and was 0.49m deep, with a basal elevation of +0.44m OD. It was filled with a soft, dark bluish grey sandy silt [1479], which contained frequent animal bone fragments and a moderate CBM assemblage, dated to c. 1630-1850. This appears to have been another feature associated with tanning, though no lining was evident.

7.12.21 Pit [1474] was truncated to the west by another substantial, north-south aligned linear cut [1485] (also recorded to the north and east as [1247]), which appears to have slightly cut the eastern edge of linear feature [1286]. Cut [1485] was at least 7m in length, extending beyond both the northern and southern limits of excavation in this part of the site. It

measured up to 2.75m wide and was 0.54m deep. It had an asymmetric profile with c. 45° sides to the west and near vertical sides to the east. The base was generally flat, at a basal level of +0.20m OD. On the base of the pit was a 50mm thick deposit of moderately compacted, mixed grey and yellowish brown, sandy silt and coarse gravel [1603]. This was interpreted by the excavator as a 'trample' layer, which represented the remnants of the original bedding for the construction of features within the pit. Cut into this were a number of square or rectangular postholes and stakeholes [1521], [1523], [1525], [1527], [1529] and [1531]. These have been interpreted as the remnants of a number of wooden structures built within the pit and probably associated with tanning and/or tawing. A similar function as that attributed to the neighbouring features to the west is thus assumed. When the features had gone out of use the linear cut was backfilled with a deposit of variably compacted, mostly dark brown to grey clayey silt [1484].

7.12.22 A small number of features were cut into the backfilled linear feature. Towards the southern edge of the excavation area was pit [1483], which was sub-oval in plan, with moderately sloping sides and a flattish base. It measured 1.40m east-west by 1.30m north-south and was up to 0.47m deep, the base being recorded at a level of +0.26m OD. It was filled with a loose, black clayey silt [1482], which included frequent building rubble (dated to c. 1630-1850) and lime fragments. It was not clear whether the latter were derived from structural mortar or a pit lining. The function of the pit was not certain as it did not exhibit the regularity associated with the many possible tanning pits in the area. A little over 2m to the northeast was the western butt end of an east-west aligned, possible beamslot [1274]. This extended for 2.15m to the east, was 0.35m wide and 0.18m deep. It had vertical sides and a generally flat base, though the basal levels varied between +0.66m OD to the west and + 0.72m OD to the east. It was filled with a soft, mid brownish grey clayey silt [1273], which contained CBM, dated to c. 1660-1900. No obviously associated features were recorded in the vicinity, and presumably any possible associated further building elements had been lost to later truncation.

7.12.23 Overlying backfilled pit [1483] was what appeared to be a later feature associated with tanning. The earliest element of this was a rectangular cut [1289], which had vertical sides and a flat base. It measured 2.15m east-west by 1.10m north-south and was 0.54m deep, with a basal elevation of +0.29m OD. Lying on the base was an east-west aligned, flat, supporting timber plank [1307], 1.66m long, 0.14m wide and 30mm thick. This was overlain by a number of north-south aligned planks [1296] – [1305], forming a base for a wooden structure. Overlying these at the western edge of the feature was north-south aligned, edge-on plank [1294], which was nailed to east-west edge-on plank [1295] that

lay along the northern edge of the feature. Together these appeared to have formed the remnants of the sides of a wooden structure. The structure was backfilled with a soft, mid brownish grey silty sand [1306], to an upper surviving elevation of +0.87m OD. The feature appears to have been another wooden tanning tank. It was cut at a later date by pit [1278], a sub-oval feature with very steep, slightly convex sides and a flat regular base. It measured 1.41m north-south by 1.21m east-west and was 0.48m deep, the base was at +0.32m OD. The fill [1277] was a firmly compacted, dark grey sandy silt that included small quantities of pottery and CBM (dated to c. 1750-1850) Its function was unclear.

7.12.24 A little over 2m to the north of pits [1474] and [1480] was the remnant of a mortar floor [1487], comprised of moderately compacted, off-white lime mortar up to 50mm thick and surviving in an area measuring 4.70m north-south by 1.70m east-west. The surface elevation varied between +0.71m OD and +0.75m OD. It was cut by two sub-rectangular postholes [1501] and [1543], which may have been the remnants of a structure which had extended to the east. The surface was also truncated by pit [1499], which appears to have been sub-circular in plan with gently sloping sides and a gently concave base. It was heavily truncated to the east but appears to have measured at least 0.70m in diameter and been at least 0.15m deep. The mortar floor was also heavily truncated by linear cut [1485] to the west. Given the heavy truncations to east and west, the functions of the floor and its associated features have been difficult to interpret. They were overlain by a 50mm thick, intermittent deposit of soft, very dark grey, ashy, sandy silt [1486], which included a quantity of dumped pan tile fragments. This was cut by an east-west aligned, sub-rectangular pit [1478], which also appeared to cut backfilled linear feature [1485]. It was 1.20m long, 0.50m wide and at least 0.54m deep, though could not be fully excavated for health and safety reasons. It contained an ashy fill [1477], similar to [1486], with abundant animal bone and some vitrified kiln furniture (broadly dated to c. 1630-1850). The pit was interpreted as having an industrial function, though this has not been more fully defined.

7.12.25 In the northwestern sector of Building 6, Phase 11 deposits [1281] and [1282] were overlain by a fragment of well cemented and compressed, dark bluish grey silty sand [1262], interpreted as the remnants of a possible floor surface. It measured 1.98m east-west by 1.18m north-south and was at an upper elevation of +2.05m OD. Cut into this was a possible, east-west aligned beamslot [1259], 1.72m long and 0.30m wide. It was filled with a variably compacted, reddish grey silty sand [1258]. No further elements of a possible structure were detected but such a structure may have extended beyond the

northern and eastern edges of the excavation area. The beamslot was overlain by a soft, mid to light grey, ashy, sandy silt [1174], which in places became a mid to dark greyish brown, clinker-rich sandy silt. It covered an area c. 5m east-west by 4m north-south in the northeastern corner of the site and extended beyond the northern edges of excavation. It was believed to have been the bedding layer for a former floor surface. Layer [1174] was cut by a small number of features, the most notable of which was rectangular pit [1177]. This measured 1.15m east-west by 0.75m north-south, and had vertical sides but was not bottomed so the nature of the base could not be ascertained. Around the edges of the pit were traces of badly degraded timber [1176], which appeared to be the remains of a horizontal plank lining, suggesting the pit had housed a wooden box or tank. The pit was filled with a concreted, white lime deposit [1175] and it was concluded that some type of industrial process involving lime had been carried out in the pit. Directly to the northwest was a much smaller rectangular pit [1179]. This measured 0.60m east-west by 0.30m north-south and survived to a depth of just 0.15m. It had vertical sides and a flat base, recorded at a level of +1.82m OD. It was filled with a soft, mid brown sandy silt [1178]. It was difficult to ascertain its function and it may have in fact been a large posthole, associated with a structure that extended beyond the northern and eastern edges of the excavated area. Four further possible, sub-circular postholes [1181], [1183], [1185] and [1187] lay directly to the south. These varied in diameter between 0.20m and 0.40m and in surviving depth between 0.11m and 0.20m. A short distance to the northwest of these was a north-south aligned, linear cut [1189], which extended beyond the northern edge of the excavation area. It was at least 1.10m long and 0.40m wide, but survived to a depth of just 0.12m. It was interpreted as another possible beamslot, and again may have been associated with a structure that extended beyond the northern and eastern edges of the excavation. It was filled with a soft, mid brown sandy silt [1188].

7.12.26 The western edge of layer [1174] was overlain by a possible gravel surface [1193]. This comprised firm, coarse gravel and sandy silt and extended over an area of at least 2.60m east-west by 2.50m north-south. It was between 50mm and 100mm thick, with the surface elevation varying between +1.98m OD and +2.04m OD. The western edge of this was cut by another north-south aligned beamslot [1195], which was at least 2.10m long (extending beyond the northern edge of excavation) but just 0.12m wide and 0.15m deep. Two small postholes [1201] and [1199] were cut into the beamslot, the former at the southern terminus and the latter c. 1.2m to the north. These features may have been associated with beamslot [1189] located just 1.7m to the east. Two further postholes [1203] and [1205] were cut into surface [1193] and may also have been associated. A final feature that may have been an element of a possible structure in this area lay to the

east of beamslot [1195] and to the south of beamslot [1189]. This comprised a rectangular cut [1192], which had vertical sides and a flat base, and measured 1.20m north-south by 0.60m east-west and was 0.30m deep. The basal elevation was at +1.70m OD and the edge of the cut was lined all round with two courses of unfrogged, mortared red bricks [1191]. The feature was interpreted as a possible fireplace, located within a possible structure defined by the nearby beamslots and postholes. It was backfilled with a loose, black cinder deposit [1190] that also included occasional fragments of pottery and burnt brick. Approximately 4.5m to the south was another feature that may have been contemporary. This was a sub-rectangular pit [1261], measuring 1.18m east-west by 0.96m north-south and recorded at an upper level of +2.00m OD. It was filled with a variably compacted, mid greyish brown silty sand [1260] but was not fully excavated.

7.12.27 In the Gatehouse excavation this phase was dominated by a structure in the northeast corner of the site, with a small number of features to the south and west. The structural evidence comprised a number of linear and sub-rectangular cuts arranged in a north-south and an east-west alignment, and overlying a possible Phase 11 structure. The easternmost feature on the east-west alignment was the southern terminus of a possible north-south aligned beamslot [1765] that extended beyond the northeastern site boundary. It was 0.24m wide and just 0.10m deep, with moderately sloping sides and a flat base, at +0.92m OD. Immediately to the west was the southern 0.55m of another possible north-south beamslot [1761]. This was 0.32m wide and 0.14m deep, with moderately sloping sides and a flat base, at +0.84m OD. Approximately 0.7m to the west was another possible beamslot [1763]. The southern 0.96m of this was present within the excavation area. It was 0.20m wide and 0.10m deep. It had vertical sides and a flat base, measured at +0.89m OD. A further 0.75m to the west was north-south aligned beamslot [1724], which measured 1.50m in length by 0.37m in width and was 0.17m deep. It had moderately sloping sides and a flat base, at +0.84m OD. The fill [1723] was a moderately friable, mid to dark brown sandy silt that included decayed wood, which may have derived from an *in situ* beam. A short distance to the west of this was a small, sub-rectangular pit [1785], which measured 0.43m east-west by 0.30m north-south and was 0.13m deep. The northern and southern sides were steeply sloping, whereas those to the east and west were vertical. The base was concave and at an elevation of +0.84m OD. It was unclear whether this feature was part of the structure but was clearly in alignment with the other elements. Directly to the west was a slightly irregular, north-south aligned cut [1793], 1.00m long, 0.30m wide and 0.16m deep. It had vertical sides and a flat base, at +0.79m OD. Despite its irregularity, it appears to have been another beamslot, the soft, mid to dark brown organic-rich fill [1792] containing abundant decayed wood, which may

have derived from a rotted timber beam. Less than 0.5m to the west was the westernmost feature in the east-west alignment [1774], which was also the southernmost feature in the north-south alignment, marking the southwest corner of the tentative structure. The cut was somewhat irregular in plan, though had probably been sub-rectangular originally. It had gently sloping sides and a slightly concave base, recorded at a lowest level of +0.76m OD. The feature measured 0.68m east-west by 0.48m north-south and was up to 0.15m deep. It was originally interpreted as another beamslot by the excavator but it appears more likely to have been a large posthole to house a weight-bearing, southwest corner post for the structure.

7.12.28 A little over 0.5m to the north of posthole [1774] was another sub-rectangular feature [1772], measuring 0.65m east-west by 0.30m north-south and 0.18m deep. It had moderately sloping sides and a flat base, at +0.72m OD. This appears to have been another posthole, and contained within the moderately compacted, mid brown clayey fill [1771] were fragments of decayed wood, which may have derived from an *in situ* rotted post. CBM, broadly dated to c. 1664-1900, was also recovered. Approximately 1m to the north was a small, sub-rectangular feature [1770], measuring 0.45m east-west by 0.16m north-south and 0.16m deep. It had vertical sides and a flat base, measured at +0.80m OD. This appeared to be another, smaller posthole and its fill [1769] again contained decayed wood, probably from a rotted post. Approximately 0.8m to the north was the northernmost feature of the north-south alignment [1776]. This was again sub-rectangular in plan, with moderately sloping sides and a slightly concave base, at +0.79m OD. It measured 0.40m east-west by 0.14m north-south and was 0.15m deep. The fill [1775] again included decayed wood from a probable internal post. All of these structural elements taken together suggest a square or rectangular structure measuring at least 5m east-west by 3.7m north-south. However the alignments appeared to continue to the north and the east, beyond the limits of excavation. A rather more substantial structure is thus likely to have stood here. Interestingly the north-south alignment appears to have been re-used by later masonry walls (see Section 7.13, below), suggesting a continuity of building and occupation in this area.

7.12.29 Situated some 1.8m southwest of the structure was a well. This comprised a sub-circular cut [1677], measuring up to 1.60m in diameter and at least 1.20m deep, though it was not bottomed for safety reasons. It was recorded at an upper level of +0.93m OD. The edge of the cut was lined with circular well structure [1698] constructed from unfrosted red bricks, seventeen courses of which were exposed, though the upper nine had been lost by truncation to the south. The space between the edge of the construction cut and the

brick structure was packed with a firm, mid brownish grey clayey silty sand [1699], which included CBM dated to c. 1630-1850. The well structure was backfilled with a loose, mid brownish grey silty clayey sand [1697], which contained frequent mortar inclusions. There were also abundant angular fragments of red bricks, along with other finds including pottery and clay tobacco pipe, which suggested the well may not have been finally backfilled until the 19th century.

7.12.30 At the western edge of the excavated area was a large pit [1666]. This appeared to have been sub-circular in plan, though it had been heavily truncated to the south and extended beyond the western limit of excavation. It measured at least 1.85m in diameter and 1.55m deep. It had steeply sloping sides and a concave base, at a lowest level of +0.18m OD. The primary fill was a moderately compacted, greyish brown to brownish grey sandy silt [1744]. It was up to 0.84m thick and contained abundant animal bone, which appeared to be butchery or tanning waste, as well as CBM broadly dated to the mid 18th to mid 19th centuries. It was overlain by a loose, mid to dark grey brown sandy silt [1665], which contained abundant building rubble, along with a small pottery assemblage. The original function of the pit was unclear, but probably associated with the tanning. It had clearly been re-used for rubbish deposition.

7.12.31 The final feature of this phase in the Gatehouse excavation lay immediately to the north of pit [1666]. It comprised an east-west aligned cut [1748], a 3.96m long segment was present within the excavated area, though it extended beyond the western limit of excavation. It was 0.58m wide with vertical sides. It was not bottomed so the depth and nature of the base were not recorded. The upper elevation was measured at +1.87m OD. It was filled with a loose, mid greyish brown sandy silt [1753], which contained frequent fragments of animal bone. Again, the original function was not clear but was probably a drain or culvert associated with an aspect of the tanning activity.

7.12.32 Towards the end of this phase of activity there was evidence of further dumping and levelling in some areas of the site. Within the Building 1 excavation area this took place away from the southwest corner where tanning activity was presumably still prevalent. Towards the north of the site, a number of the Phase 12 features were sealed by a deposit of moderately compacted, mid to dark grey sandy silt [249], which included frequent building rubble (dated c. 1630-1850), pottery (dated late 17th-early 18th century) a small clay tobacco pipe assemblage (dated 1680-1710), and which formed a surface on which future activity was to take place. The deposit was up to 0.25m thick and was present at an upper elevation of +1.98m OD. Further to the south a soft, mid grey to dark

greenish grey sandy silt up to 0.30m thick [295], and a moderately compacted, greenish bluish grey clayey silt [297] were comparable deposits at upper elevations of +1.92m OD and +1.91m OD respectively. Towards the eastern side of the site a moderately compacted, light grey mortar-rich deposit [258] was overlain by a moderately compacted dark greyish brown clayey silt [257], recorded at an upper elevation of +1.68m OD. None of these deposits appeared to extend far to the north as no such deposits of this phase were apparent in Buildings 5 or 6. However in the Gatehouse excavation a deposit of this period overlies some of the backfilled beamslots towards the eastern side of the site. This deposit [1810]/[1813] comprised a variably compacted, mid grey silty sand with silty sand lensing. It spread intermittently over an area of more than 2.5m north-south by 2.5m east-west, but was just 50mm thick.

7.12.33 Tanning remained the dominant industry across the site until the early 19th century. In 1814 a vinegar works was established here by Noah Slee of Slee, Vickers and Company. The following phase of activity was therefore dominated by structures and processes associated with the vinegar production industry. However, this industry utilised earlier structures and because of later truncation and stratigraphic discontinuities, some features assigned a post-1814 date, may originally have been slightly earlier. This phase is therefore broadly dated as 18th – 19th centuries:

7.13 PHASE 13: POST-MEDIEVAL INDUSTRY 3; c. 18th – 19th Centuries (Figure 19)

7.13.1 In the Building 1 excavation area this phase was dominated by the construction of masonry structure [239]. This comprised a building measuring at least 21m north-south by 9m east-west and was represented by the first phase of construction. The most significant elements recorded were two parallel, north-south aligned walls, which extended most of the length of the site. The western of these two was identified as wall [238], though towards the north of the excavation area, where a section of the construction cut [278] was excavated, it was also recorded as wall [260]. The wall was constructed from unfrogged, red and yellow bricks, bonded with a very soft, grey lime mortar. The individual bricks measured 220mm in length, 95-105mm in breadth and 45-65mm in height. The wall was 0.39m wide and survived to a height of up to 0.62m, at an upper elevation of +2.35m OD. Abutting the northeastern edge of the wall was a small surviving fragment of brick floor [266]. This covered an area of only 0.53m north-south by 0.32m east-west, and was constructed from shallow-frogged, purple bricks, each measuring c. 230mm by 100mm by 60mm. A short distance to the south a more extensive area of brick floor [265] survived, abutting the eastern side of wall [238]. This was constructed from similar bricks as [266] and was originally part of the same floor

surface. It was recorded at an upper level of +1.99m OD. To the west of the wall there was fragmentary evidence of external construction. A little over 6m south of the northern end of the wall comprising a surviving segment of east-west wall [270]. It was constructed from red and purple, mostly broken bricks, measuring up to 160mm by 110mm by 70mm, and irregularly bonded with a hard grey lime mortar. Up to eight courses were present giving a maximum surviving height of 0.59m (upper level +2.39m OD). It was 0.42m wide and a 1.78m length survived. Located 2m to the north was a parallel wall [267], constructed from similar bricks, measuring c. 220mm by 100mm by 70mm, irregularly bonded with a grey, sandy lime mortar with chalk and charcoal inclusions. A 1.60m length of the wall survived, which was 0.22m wide and up to 0.54m high, with the upper level recorded at +2.29m OD. The wall was abutted to the north by a brick and cobble floor [268], generally constructed from unbonded broken cobbles and purple bricks, though a few complete examples of the latter were recorded, measuring c. 230mm by 100mm by 60mm. The bricks were generally arranged in rows of north-facing headers. The remaining floor covered an area measuring 1.68m north-south by 1.36m east-west, recorded at a surface elevation of +1.99m OD. To the west the floor abutted the remains of another north-south aligned wall [271]. This was constructed from mostly broken, purple bricks, though where complete examples survived, these measured c. 230mm by 100mm by 70mm. The bricks were irregularly bonded, though quite loose as recorded, with no mortar visible. Only two courses survived *in situ* and the remaining fragment of wall only measured 1.20m north-south by 0.56m east-west, with an upper elevation of +2.02m OD.

- 7.13.2 To the northwest of the walls and floors was a 0.73m long fragment of a further east-west aligned wall [259], set within construction cut [282]. The wall was constructed from purple bricks, measuring up to 240mm x 110mm x 70mm, bonded with a grey, lime and sand mortar with charcoal flecks. It was 0.26m wide and stood up to 0.32m high, with an upper elevation of +2.05m OD. To the northwest it was keyed into a rectangular, brick-built soakaway [230]. This was constructed from red bricks, irregularly bonded with a grey lime and sand mortar. The surviving structure measured 1.10m east-west by 1.09m north-south and stood up to twelve courses (0.80m) high, at a maximum elevation of +1.96m OD, with the base measured at +1.17m OD. The individual walls were up to 0.22m wide, but the structure had been extensively truncated. It was backfilled with a loose, very dark brownish grey coarse silt, with a high clinker content [229], interpreted as some type of industrial waste.

7.13.3 The second major north-south wall was located a little over 6m to the east of wall [238] and adjacent to the eastern site boundary. The northern 9.86m was recorded as [240], which comprised red and yellow unfrosted bricks, measuring on average 110mm x 105mm x 65mm, and irregularly bonded with a soft, grey, slightly sandy lime mortar. The wall was up to 0.44m wide but four courses up from the base it stepped inwards by 50mm on the western side. It survived to a height of up to 0.83m, the upper elevation being at +2.30m OD. Abutting the western side of the wall was an extensive area of brick flooring [264]. This was constructed from shallow-frosted purple bricks, similar to those in floors [266] and [265] to the west and was originally part of the same internal floor surface. An area measuring up to 4.87m east-west by 4.66m of floor [264] survived, and it was at an upper elevation of +2.04m OD. This wall also abutted an internal pillar base [296], which was constructed from unfrosted red bricks and half-bricks. Only a single course survived and the base measured up to 0.42m east-west by 0.38m north-south. The upper surface was recorded at +1.82m OD. To the north, wall [240] was abutted by east-west wall [261], constructed from purple and yellow bricks, measuring c. 230mm x 110mm x 70mm, irregularly bonded with grey, lime and sand mortar. At least seven courses of brickwork survived, with the wall extending to a height of 0.64m, the upper elevation recorded at +2.31m OD. The wall was up to 0.60m wide and extended for 4.56m to the west. It appears to have been the eastern continuation of wall [259], though the continuity was disrupted by later truncation. Wall [261] was also stepped out towards its eastern end, to form a possible buttress.

7.13.4 At the southern end of [240] a feature was built into the wall. The first element of this was a small masonry structure [244], built of unfrosted red bricks, measuring up to 145mm x 95mm x 65mm, irregularly coursed with soft, grey, slightly sandy lime mortar. These formed a curved structure measuring 0.55m east-west by 0.24m north-south and surviving to a height of 0.38m (upper elevation +2.25m OD). It is believed that this was originally built to support an arch springing above. Built onto the eastern side was another fragment of masonry [262], built from similar bricks and measuring up to 0.46m east-west, 0.23m north-south and 0.23m high, at an upper level of +2.21m OD. This was possibly the base of an arch. Extending southwards from these two structures was a single line of red, unfrosted bricks [241], bonded with a very soft, mid grey sandy lime mortar. The individual bricks measured c. 220mm x 100mm x 60mm and the feature was 1.23m in length. At the southern end it abutted a small curved structure [245], built from unfrosted red bricks, bonded with soft, grey, slightly sandy lime mortar. The structure measured 0.44m east-west by 0.22m north-south and only one course survived (upper level +1.94m OD). This was believed to have been a similar feature to [244], supporting

the southern end of the arch sprung between the two. These features together, therefore appear to have been the remnants of some type of entrance in this eastern wall, described by the excavator as a chute and archway. The north-south wall continued to the south of [245] for 0.95m as [243] (upper level +1.97m OD). There was then a gap of 1.5m before it continued southwards for a further 4.05m as wall [242] (upper level +2.36m OD). An east-west aligned wall [582], which formed an internal partition to structure [239] ran between wall [238] to the west and wall [242] to the east. It was built from unfrogged, red bricks, each measuring 220mm x 95-105mm x 45-65mm, irregularly bonded with a soft, grey lime mortar. The wall was 0.40m wide and four courses of bricks survived; at an upper elevation of +2.24m OD.

- 7.13.5 The various brick and mortar features therefore were the remnants of the first phase of construction of an industrial building. The only non-structural feature, apparently dating to this phase was a sub-circular pit [339] located a little over 1m north of the building. This measured up to 0.36m in diameter and was just 90mm deep, with concave sides and base, measured at a lower elevation of +1.87m OD. It was filled with a loose, very dark grey clinker material in a silty clay matrix [338], interpreted as industrial waste. The function of the pit was not certain but was probably associated with activity in the building.
- 7.13.6 Apparently the earliest features of this phase in the Building 5 excavation were two brick pillars located towards the southern edge of the site. The westerly of these features comprised a sub-rectangular cut [913], with steeply sloping sides and measuring 0.85m across. The base of the cut was levelled with timber [910] and above this was built a square, brick-built pillar [906], comprising red, unfrogged bricks, coursed regularly with alternating headers and stretchers and bonded with a creamy white sandy mortar. The structure measured 0.50m x 0.50m and stood three courses high. Above the third course was another layer of timber [909], and above this were a further three courses of brickwork [892], with the upper elevation recorded as +2.28m OD. The remainder of the cut was backfilled with a soft, dark grey, clayey silt [912], up to 0.40m thick, which was covered by a dump of metal slag [911]. The eastern feature comprised a sub-rectangular cut [918], with steeply sloping sides, measuring up to 0.47m across and 0.72m deep. Within the cut was a brick pillar [920], constructed with red and yellow bricks in a similar fashion to the pillar to the west. The lower courses were overlain by a layer of timber [923], above which, were a further four courses of brickwork [919]. The backfill around the pillar [917] comprised a friable, dark grey clayey silt with frequent CBM fragments.

7.13.7 Adjacent to these features was an extensively intact, timber-lined tank structure [820] (Fig. 17). The initial phase in the construction of this feature was the excavation of a rectangular pit with vertical sides and a flat base [752], measuring 4.04m east-west by at least 2.25m north-south (the southern edge having been truncated by later activity) and at least 0.86m deep, the apparent top of the cut being at +2.30m OD. The pit was lined with a soft, plastic, light bluish grey clayey silt [931], up to 100mm thick. Above this was a thin layer of firm, dark reddish brown to dark bluish grey, clinker-rich silty clay [985], which included a residual fragment of late medieval tile. The timber tank was constructed on top of this. The basal element of the tank comprised a group [971] of seventeen, north-south aligned, horizontally laid timber planks ([951] – [967]), measuring between 0.97m and 1.26m in length and between 0.15m and 0.22m in width. Overlying the basal planks were three, parallel east-west aligned support beams [865], [866] and [867], each measuring up to 3.23m x 120mm x 95mm, and attached to the underlying planks by iron nails. At each end the beams were joined with nails to shorter, north-south aligned beams [863], [864], [888] and [889], such that northern main beam [865] was attached to the middle main beam [866] by short beam [863] to the west and [888] to the west; beam [866] was attached to southern main beam [867] by short beam [864] to the west and [889] to the east. A rectangular frame was thus formed. Attached to the top of this with series of nails was the floor of the tank [849], comprising thirteen, north-south aligned, parallel planks [822] – [834], each up to 1.32m in length, between 230mm and 270mm wide and between 40mm and 50mm thick. Lying above the floor the northern wall [850] of the tank was comprised of five, east west aligned planks, on edge, one above the other, which from the base upwards were [887], [842], [841], [840] and [839]. Each measured between 2.30m and 2.93m in length and was up to 335mm wide. They were attached to one another using iron nails. The western wall of the tank [851] comprised five, north-south aligned planks, on edge, one above the other, which from the base upwards were [886], [836], [837], [835] and [859] ([837] may have been a degraded bracing timber rather than an actual walling plank). A further plank [838] formed a timber step on the floor. The planks measured between 1.40m and 1.48m in length (each having been clearly truncated to the south), and up to 260mm wide. They also appear to have been attached to one another by iron nails. The eastern wall of the tank [847] comprised four, north-south aligned planks, on edge, one above the other, which from the base upwards were [885], [847], [846] and [845] ([847] was actually a bracing timber rather than a walling timber). A further plank [848] formed a timber step on the floor. The planks were up to 1.45m long (having been truncated to the south), and up to 0.20m wide.

7.13.8 The primary fill of tank [820] was a firm, dark bluish grey to black clayey silt [751], up to 0.30m thick. It was overlain by up to 0.50m of indurated, variably mid brownish red and light grey green sandy gravel, comprised mostly of concreted ash and slag [750]. The tank, in common with earlier tanning structures, appears to have been prefabricated prior to being placed in the pit (it may even have been a re-used boat, see Appendix 13). However it was clearly of a later date than the timber tanning frames/tanks recorded elsewhere on the site. Its original function may have been associated with a late phase of tanning activity or it may have been linked to the early vinegar industry. It does however appear to have been backfilled during the 19th century when the vinegar plant was functioning (pottery from fill [750] suggests a post-1820 deposition). To the west of the tank was a single coursed row of bricks forming a north-south alignment [891]/[786]. The bricks were red and unfrosted, each measuring c. 220mm x 90mm x 60mm. A total of thirteen bricks were present in the feature, giving a length of 0.98m. The upper elevation was at +2.30m OD. This feature may have been the rebuild of an earlier wall [756]/[930] recorded in section, though its function was unclear.

7.13.9 There appear to have been a few further features contemporary with structure [820], all cut into Phase 11 dumping deposit [860] or later dumping deposits that overlay this. A little over 2.5m northeast of the tank was a small, sub-circular pit [870], up to 0.64m in diameter but just 0.13m deep. It had straight and steep sides, and a flat base, at +1.89m OD. It was filled with a soft to friable, mid to dark grey brown clay silt [869], which included building rubble along with small assemblages of pottery (dated 1580-1700) and clay tobacco pipe (dated 1680-1710). Directly to the northeast was a small sub-rectangular pit [874], which measured 0.66m north-south by 0.50m east to west and which was up to 0.50m deep. It had very steep to vertical sides and a generally flat base, though there was a deeper depression in the southwest corner, recorded at +1.55m OD. The pit was filled with a moderately compacted, light to mid grey brown sandy silt [873], which included frequent building rubble along with occasional pottery (dated 1760-1770), oyster shell and animal bone. The function of neither pit was clear as there were no obviously associated features. Both were at upper levels of between +2.01m OD and +2.03m OD, but had probably been extensively truncated by later activity. Located approximately 1.8m northeast of pit [874] was an isolated sub-circular posthole [884], up to 0.26m in diameter and 0.32m deep. It had vertical sides and a flat base, at +1.61m OD. The fill [883] was a very soft, mid brown sandy silt, but contained no dateable finds. It was not obvious to what structure, if any, the feature was related.

7.13.10 Less than 5m to the northwest of tank [820] was a sub-rectangular (though heavily truncated) pit [872], measuring up to 1.22m north-south by 1.10m east-west and 0.40m deep. It had steeply sloping sides and a flat base, at +1.28m OD. It was filled with a variably compacted, mid grey clay silt [871], which contained a moderate dateable finds assemblage, including a large number of pan tile fragments, some in an unusual fabric. It also contained burnt fragments of Kimmeridge Shale. The feature was interpreted as a rubbish pit, which was undoubtedly its secondary function. Its primary function, remains less clear.

7.13.11 A number of other features in Building 5 may also have dated to this phase. However, because of heavy truncation these features have tended to be rather fragmentary and crucial stratigraphic relationships have been lost. At the northern edge of the excavation area was a surviving fragment of an apparently east-west aligned feature. This comprised a cut [893], at least 2.9m long (though completely truncated to the west), at least 0.42m wide (though extending beyond the northern edge of excavation) and 0.12m deep. It had vertical sides and a flat base, at +0.71m OD. Within the cut was an east-west aligned fragment of wall [895], constructed from red/orange bricks (dated to c. 1750-1850), irregularly bonded with light grey, silty sand mortar. The surviving length of the wall was 2.33m and it was up to 0.45m wide. It was at an upper elevation of +1.57m OD. Between the wall and the edge of the cut to the south was a backfilling deposit [894], comprising a variably compacted, mid grey clayey silt. To the north of the wall was a more substantial fill deposit [972], comprising a loose, mid yellowish grey silty sand. Although heavily truncated, these contexts appear to have represented the remains of a cess pit that extended to the north of the excavated area, [893] being the cut, [895] being the brick lining, [894] being the packing between the cut and the structure, and [972] being the backfill of the feature. A short distance to the west was a more extensive, though poorly defined, east-west aligned cut [922], which extended over at least 9m westwards. It was at least 0.9m wide, though it ran beyond the northern limit of excavation, and was between 0.50m and 0.65m deep. It had vertical sides and apparently, an originally flat base, at a lower elevation of +0.78m OD. Within the cut was a deposit of variably compacted, light to mid grey brown clayey silt [921], up to 0.60m thick, and containing CBM dated to c. 1700-1900. Cut into this deposit was a small, sub-rectangular pit [903], measuring 0.56m north-south by 0.55m east –west and just 0.13m deep. It had vertical sides and a flat base, at +1.14m OD. Within the cut was a mixed lining [904], comprising a single course of brick facing along the northern edge, and partly along the eastern edge, along with wood fragments and slag, all in a sandy silt matrix, and recorded at an upper elevation of +1.29m OD. Directly to the south of the eastern recorded extent of

cut [922] was a small L-shaped feature [948]. The cut was vertical and measured up to 0.50m north-south by 0.30m east-west (upper elevation +1.48m OD). Within it were the remains of a red brick wall [946], at an upper elevation of +1.38m OD, though it had been so heavily disturbed that it was difficult to ascertain its form or coursing. Consequently the function of the feature was impossible to determine. The cut was backfilled with a soft, mid greyish brown silty clay with traces orange mortar [947].

7.13.12 The evidence from the Gatehouse excavation also suggests that this phase was dominated by the construction of a building or buildings on the eastern half of the site. A number of east-west and north-south aligned supporting walls were recorded. The easternmost wall here [1714]/[1681] extended the full width of this part of the excavation area and continued to the north and south. It was constructed from red, frogged bricks, each measuring c. 220mm x 90mm x 60mm, bonded with a coarse grained, sandy mortar. Only two courses of the wall survived, the upper comprising all headers in the facing, the lower comprising alternating headers and stretchers. The wall was 0.34m wide and survived to a height of just 0.20m, the upper level at +1.28m OD. It appears to have been internal to a building. Less than 1.5m to the west was a more substantial, probably weight-bearing, parallel wall [1672], which also extended beyond the northern and southern edges of the excavation area. It was constructed from red, unfrogged bricks, each measuring c. 220mm x 90mm x 50mm and bonded with light grey lime mortar. Three courses survived, the upper comprising all headers facing to the east and all stretchers facing to the west. The second course saw this pattern reversed and the lower course, which was stepped out by 50mm, comprised all headers facing on both sides. The wall was up to 0.35m wide and stood up to 0.40m high, the upper level measured at +1.48m OD. It was connected to wall [1714]/[1681] by east-west aligned wall [1682], which abutted both of the north-south walls. It was constructed from red and yellow, frogged bricks, each measuring c. 220mm x 100mm x 70mm and bonded with a white, sandy lime mortar. At least three courses survived with the upper course comprising a row of north-south aligned whole bricks to the south and a row of half bricks to the north, each side was thus faced with headers. The wall was 0.32m wide and recorded at an upper elevation of +1.24m OD.

7.13.13 Immediately to the west of wall [1672] and running parallel to it was a slightly less substantial structure, wall [1671]. It was constructed from unfrogged, red bricks, comprising one course, one brick wide, giving a western header facing, overlying a course three bricks wide, giving a stretcher facing. The bricks were bonded with a light grey, sandy lime mortar. The wall was at least 3.02m long (extending beyond the

southern limit of excavation), 0.31m wide and at an upper elevation of +1.14m OD. It was interpreted as an internal floor support. All of the above walls were recorded within a construction cut [1716], which had vertical sides and a flat base measured at a lower level of +0.96m OD.

7.13.14 A little over 2.6m to the northwest was a further north-south wall [1673], which extended northwards from approximately level with a point c. 1.5m north of the northern end of wall [1671], beyond the northern edge of excavation. It was constructed from unfrogged bricks, each measuring c. 230mm x 100mm x 70mm and bonded with a yellowish sandy mortar. Six courses survived, the upper of which exhibited mainly stretcher facing, whereas the courses below were mostly alternating headers and stretchers. The wall was 0.35m wide and stood up to 0.40m high, the upper level being recorded at +1.48m OD. It had probably originally extended further south, but was rebuilt in this area in a following phase (see Section 7.14, below). A little less than 1.5m to the west of the northern recorded extent of wall [1673] was a short, surviving fragment of an east-west aligned wall [1738]. It was set within a construction cut [1737], which was 0.30m wide, at least 0.20m deep, with vertical sides and a flat base, recorded at a lower elevation of +1.05m OD. It was constructed from unfrogged, red bricks, each measuring c. 220mm x 90mm x 60mm, bonded with a light grey, coarse grained mortar, and comprised a single row of north-south aligned bricks. The surviving section of wall was just 0.52m long, 0.22m wide and one course high, at an upper elevation of +1.27m OD. It had probably originally extended eastwards to wall [1673], however the relationship between the two was destroyed by robber trench [1740], which had removed most of the bricks from [1738]. It may be that the surviving fragment of wall [1738] had been left *in situ* to provide a buttress for a later phase construction.





7.13.15 A number of features towards the western edge of the Gatehouse excavation appeared to be contemporary with the early building elements to the east. At the northwest corner of the site a fragment of an east-west aligned feature was recorded, which extended beyond the western and northern edges of the excavation area. It comprised a cut [1817], at least 0.32m wide and 0.36m deep, with very steeply sloping sides, within which a lining [1816], had been constructed from reddish orange, unfrogged bricks. The bricks were stretcher laid and had been bonded with a light grey, chalky mortar. The feature was interpreted as a brick-lined culvert, though it was not clear how far to the east it had originally extended, because of extensive truncation. Approximately 0.6m to the south was a small surviving fragment of an east-west aligned wall [1750]. It was constructed from red bricks arranged to give header facings to the north and south with a more rubble core. The bricks were bonded with a light grey, sandy lime mortar. Just two courses remained, and just a 1.70m length of the wall survived. It was 0.34m wide and recorded at an upper level of +1.19m OD. It may originally have been associated with the structural elements to the east but any relationships were lost by heavy later truncation.

7.13.16 A little under 2m to the south of wall [1750] was an east-west aligned linear cut [1664], which extended eastwards for 3.00m from the western site edge, before being totally truncated. It was 0.51m wide and 0.32m deep, with gently sloping sides and a slightly concave base, measured at a lower elevation of +1.49m OD. It was lined with red/purple, shallow-frogged bricks [1663], irregularly coursed and bonded with a creamy white, sandy lime mortar. This appeared to be a brick-lined drain and was backfilled with soft, silty, cassy material [1701]. Just under 2m to the south was a sub-rectangular pit [1695], which measured 2.10m east-west by 1.41m north-south and was 1.56m deep, with near vertical sides and a flat base, recorded at a lower elevation of -0.06m OD. Within the cut was a lining [1694] comprising unfrogged, red bricks (including three 'dog-leg' bricks in fabric 3034, and also two fragments of Italian Carrara Marble), coursed to give a header facing. Up to fifteen courses survived and the lining structure measured 1.90m east-west by 1.10m north-south and up to 1.10m high, the upper level recorded at +1.51m OD. The gap between the structure and the edge of the cut was a variably compacted, mid orangey brown silty sand [1696], which contained small quantities of pottery, and CBM broadly dated to c. 1630-1850. The primary fill of the feature was a soft, mottled sandy material with 'peaty' lenses [1693]. This may have included remnants of a rotted wooden floor. Above this was a layer of soft, mid greenish grey sandy silt [1692], interpreted as a cess deposit, and which contained CBM broadly dated to c. 1700-1850. The final backfilling deposit [1691] comprised a moderately compacted, mid grey sandy silt, which

included frequent building rubble, a possible fragment of Forest marble and domestic rubbish including a bone tool handle (TBB03 <13>). The final feature of this phase lay a short distance to the east. This comprised an oval cut [1686], measuring 1.10m north-south by 0.70m east-west and 0.50m deep, with near vertical sides and a flat, though slightly sloping base, at a lower elevation of +1.11m OD. Within the cut was a lining [1687] which comprised of two courses of unfrogged, red half-bricks, bonded with a light creamy yellow lime mortar. This was interpreted as a support for a later drain ([1684]/[1690], see Section 7.14, below). The feature was backfilled with a moderately compacted, mid grey brown sandy silt [1685], which included frequent building rubble (dated to c. 1630-1850), particularly post-medieval peg tile, and a small quantity of pottery.

7.14 PHASE 14: POST-MEDIEVAL INDUSTRY 4; c. 19th Century (Figure 21)

7.14.1 This phase was most clearly defined within the Building 1 excavation area, where it was dominated by the secondary development of structure [239], which was extended northwards. The eastern, external north-south wall was extended to the north with wall [255]. This was constructed from shallow-frogged, purple/red and orange sandy bricks, measuring c. 230mm x 110mm x 70mm, mainly coursed in rows of facing headers, and bonded with a grey, lime and sand mortar. It also included fragments of architectural stone that may have derived from Bermondsey Abbey. It extended for at least 4.04m north of the original northern edge of structure [239] and was 0.53m wide. Up to seven courses of brickwork survived, with an upper elevation of +2.48m OD. To the west of the wall was a 100mm thick deposit of friable mortar [302] that extended for up to 4.10m east-west and 3.90m north-south, and appears to have been the bedding layer for an early Phase 14 floor. However, only two fragments of this survived. Towards the south an area measuring just 0.55m north-south by 0.45m east-west contained a patch of red brick and ceramic tile floor [305], at a surface level of +1.96m OD. Further to the north a slightly more extensive fragment of floor [304] survived. This was constructed from north-south aligned, whole and part red bricks measuring up to 240mm x 120mm x 55mm, and larger flagstones. This fragment of floor survived across an area measuring up to 1.73m east-west and 1.08m north-south, with the surface being at between +1.92m OD and +1.93m OD. It was overlain by a 0.97m long fragment of north-south wall [303], built from red/purple bricks, measuring up to 220mm x 100mm x 70mm. The wall comprised a single row of mostly north-south aligned stretchers, bonded with a grey, lime and sand mortar, and was recorded at an upper level of +2.00m OD. In the area between the fragmentary floor deposits was a 100mm thick layer of loose, brownish purple fine sand [299], containing a high proportion of clinker and slag and described as industrial waste.

- 7.14.2 Towards the south central area of the structure's extension was a rectangular cut [336], which appeared to be contemporary with this early part of Phase 14. It measured 4.30m east-west by 3.20m north-south and was 0.35m deep, with vertical sides and a flat base, its lower elevation was at +1.41m OD. It had been cut from an apparent level of +1.88m OD, and was filled with mixed building rubble [335], which supported a concrete slab [293].
- 7.14.3 At the western side of structure [239] two fragments of a north-south aligned, northern extension wall were identified. The southernmost fragment [251] was constructed from yellow and red/purple bricks, measuring c. 230mm x 110mm x 70mm with headers facing and bonded with off-white lime and sand mortar. Only a 1.07m length of the wall survived, it was 0.75m wide and up to four courses were visible, giving a maximum height of 0.42m and an upper elevation of +2.16m OD. Less than 1.5m to the north a slightly more extensive fragment of wall [256] survived. This was 1.95m long, 0.40m wide and at least 0.40m high. It was constructed from reused architectural stone and brick fragments, irregularly bonded with a grey lime and sand mortar, and at an upper elevation of +2.09m OD. Also in the area of the northwest corner of structure [239], the original northern east-west wall of the structure was replaced by a later wall [250]. This was constructed from purple/yellow bricks, irregularly bonded with a light brown, sandy mortar. A 1.85m length of the wall was recorded, which was up to 0.72m wide and stood up to six courses (0.36m) high. The highest elevation was +2.04m OD.
- 7.14.4 Within the extended area of structure [239], abutting the later walls and overlying earlier Phase 14 features, were the more extensive remains of later floors. Towards the western side of the structure the later floor was [252], which abutted wall fragment [256] and overlay concrete slab [293]. Floor [252] was constructed from yellow stock bricks, measuring c. 230mm x 110mm x 70mm, laid on edge, aligned east-west in a stretcher bond and bonded with a light brown, sandy cement mortar. The surface of the floor was at between +1.96m OD and +2.07m OD and it measured up to 4.28m east-west by up to 3.36m north-south. On the floor was a metal scar, presumably from a piece of iron or steel machinery, and a number of impressions [286], presumably from footings to house the machinery. On the eastern side of the extended structure the floor was recorded as [253], which extended for up to 4.00m east-west and 3.95m north-south. It was built of flagstones, ceramic floor tiles (including very large Victorian paving tiles in fabric 3047) and orange, sandy bricks, bonded with an off-white, lime and sand mortar. The surface was recorded at between +1.96m OD and +2.05m OD. Towards the northern edge of the

excavated area a slightly raised area of brick floor [254], overlying earlier floor [304] appears to have been contemporary with floor [253]. It was constructed from orange bricks, measuring up to 230mm x 110mm x 45mm, aligned north-south and bonded with a lime and sand mortar. The surviving area of this floor measured just 1.35m east-west by 0.98m north-south, with the surface being at +2.08m OD.

7.14.5 Dividing floor [252] to the west and floor [253] to the east was a linear cut [292], which ran north for 3.08m from the surviving southern edge of both floors, before turning to the west and being truncated by a modern pillar base. It was up to 0.55m wide and 0.14m deep with very steep sides and a flat base, and was believed to have been the setting for a (since removed) internal partition wall. Running to the south of both floors [252] and [253] was an east-west aligned drain cut [285] which was recorded over a length of 6.05m, was 0.56m wide and 0.30m deep. It had very steep sides and a relatively flat base (at a lower elevation of +1.83m OD) and it was thought to have originally drained into Phase 13 soakaway to the west, though the relationship between the two was lost to modern truncation. A small fragment of drain cover [269] survived towards the western end of the feature. This comprised fine, sandy orange bricks, measuring 230mm x 110mm x 45mm, aligned in a row of north-facing headers and bonded with off-white lime mortar. Only four bricks remained *in situ*, the upper elevation being at +2.04m OD.

7.14.6 Two features within the Building 5 excavation may also have dated to this phase. Towards the northern edge of the excavation was a well, which appeared to partly truncate the southern edge of a possible Phase 13 cess pit [893]. The cut of well [876] was sub-circular in plan, measuring up to 1.80m in diameter, and it had vertical sides. It was not fully excavated so the depth was not known. The upper surviving level of the cut was at +1.70m OD, though it had probably been heavily truncated by later activity. The cut was lined with shallow frogged, red bricks (dated 1750-1850) set in a sandy mortar and forming a circular internal structure [878]. The surviving upper four courses were exposed and at a maximum elevation of +1.59m OD. The gap between the edge of the cut and the brick structure was backfilled with a friable, light yellowish brown sand [877], which included quantities of dumped, fragmentary pan tiles (dated to c. 1750-1850). The well itself was backfilled with a loose, mid to dark greyish brown, ashy silt and building rubble [890], overlain by a loose, dark grey ashy silt deposit [880], also containing some building rubble and up to 0.35m thick. This in turn was overlain by the upper surviving fill, a loose, mixed greyish brown, black and reddish brown ashy silt [879] containing building rubble and slag, and was up to 0.80m thick. Towards the western side of the Building 5 excavation area, Phase 13 pit [872] was truncated to the west by pit [855], which was

sub-rectangular in plan with sides sloping at c. 45° and a gently concave base (at a minimum elevation of +1.43m OD). It measured 1.70m north-south by at least 0.80m east-west (having been totally truncated to the west by a recent stanchion [798]) and it was 0.20m deep. It contained a single fill [854], which comprised a soft, dark brown green sandy silt and contained small amounts of waste materials, including pottery, CBM fragments, clay tobacco pipe (dated 1700-1740), animal bone and oyster shell. The function of the pit was unclear and not interpreted by the excavator. The nature of the fill, however suggests it may have been an unlined cess pit.

7.14.7 In The Gatehouse excavation there was also evidence that the building(s) originally constructed during Phase 13 underwent secondary development during this phase. An east-west aligned wall [1670] was constructed, which abutted the eastern edge of wall [1673] and probably replaced an original Phase 13 structure. Wall [1670] was built within construction cut [1706], at a basal level of +1.17m OD. The wall comprised red and yellow, unfrogged bricks, irregularly coursed and bonded with a yellowish sandy mortar. A 1.80m length was recorded, which was 0.40m wide and which had survived to three courses high, with the upper level at +1.26m OD. Abutting the southern edge of wall [1670] was a further north-south wall [1668], which extended for more than 4m southwards, beyond the southern edge of excavation. Wall [1668] was set within construction cut [1718], which was 0.40m wide, with vertical sides and a flat base, at a lower elevation of +0.95m OD. The wall was constructed from unfrogged, red bricks, bonded with a light grey, lime mortar. They were laid in alternating courses of headers and stretchers, though only two courses were exposed. The wall was up to 0.31m wide and survived to a level of at least 0.12m, with the upper level recorded at +1.15m OD. This has been interpreted as a floor support. Phase 13 wall [1673] appears to have been extended or rebuilt to the south as wall [1669]. This was constructed from unfrogged bricks, each measuring c. 220mm x 100mm x 70mm, irregularly coursed and bonded with yellowish sandy mortar. Up to four courses were present, and the wall, which was 0.33m wide extended for 2.8m south of the southern end of wall [1673]. Additions were also made to the western side of wall [1673]. At the southern end was a fragment of wall [1719], which had probably extended further to the west but had been lost due to heavy truncation. It was constructed from unfrogged bricks of similar dimensions to those in wall [1669], and bonded with a similar mortar. Only two courses survived, which appeared to comprise headers to the north and a row of stretchers to the south. The remaining fragment measured only 0.40m north-south by 0.22m east-west and stood up to 0.22m high, at an upper elevation of +1.14m OD. Abutting it to the north and lying along the western side of wall [1673] was a further north-south aligned wall [1674], constructed

- from two parallel rows of north-south aligned, unfrogged bricks, giving a stretchered western face. Two courses of brickwork survived, which were bonded with a yellowish sandy mortar. The wall, was 1.10m long, 0.23m wide and stood up to 0.20m high, with an upper level of +1.12m OD. It was believed to be a foundation for a floor.
- 7.14.8 Less than 1.8m to the west of wall [1669] was an 'L-shaped' structure [1709], comprising unfrogged bricks, bonded with a white lime mortar. Two courses of brickwork survived with the upper course consisting of mainly east-west aligned bricks and the lower one of north-south aligned bricks. The structure measured 1.60m north-south by 0.90m east-west and stood up to 0.22m high, the upper level was at +1.19m OD. It was believed to have been part of a wall footing and was associated with the structural elements to the east. Abutting it to the north was a small segment of north-south wall [1708], measuring just 0.70m in length by 0.30m wide and 0.22m high. It was built from unfrogged bricks bonded with a white lime mortar. Three courses survived, the top and bottom comprising facing headers and the middle one comprising facing stretchers. The top of the wall was at +1.19m OD.
- 7.14.9 Partly truncating fragmentary Phase 13 wall [1738] and a number of earlier features was an extensive construction cut [1711], which measured c. 5.60m north-south by 3.00m east-west and which was up to 0.60m deep. It had vertical sides and a flat base, at a lower elevation of +0.94m OD. Most of the footings that were originally within the cut had been removed by later truncation, however towards the south a fragment of limestone [1713] was recorded, which may have been a surviving masonry element. It measured 0.70m east-west by 0.60m north-south and was 0.10m thick. It appeared to have originally been circular in form and may have been a support for machinery housed within a building. At the northwest corner of cut [1711] was a 1.30m diameter, 0.22m thick limestone toothed cog wheel [1712], which had a roughly hewn, central rectangular perforation. It appears to have been part of some type of machinery used in the vinegar factory.
- 7.14.10 Butting the southern edge of wall [1709] was a further north-south wall [1702]/[1704], which extended approximately 4m southwards before being lost to later truncation. The wall was constructed from unfrogged red bricks, each measuring c. 220mm x 100mm x 60mm and bonded with a friable, coarse-grained, light grey mortar. They were coursed in a header bond and up to five courses survived. The wall was 0.55m wide and stood up to 0.40m high, with an upper elevation at +1.40m OD. Towards the southern edge of the site wall [1702]/[1704] was butted on its eastern side by a small structure [1707], formed

from unfrogged bricks, bonded with a yellowish, sandy mortar and irregularly coursed. The structure included both north-south and east-west aligned walls enclosing two very small internal areas. In all it measured 1.80m north-south by 1.25m east west, but survived to a height of only 0.20m, the upper level being at +1.24m OD. The actual function of the structure was unclear, though along with other brick-built elements, it appeared to be part of the secondary development of the vinegar factory complex.

7.14.11 A small number of features to the west of the building also appear to have been contemporary with this phase of development. Immediately to the west of wall [1709] was the surviving fragment of a pit [1752], which had been extensively truncated to the north and west. The western edge of the same feature appears to have survived to a greater degree. This was recorded as pit [1652] and appears to have been sub-rectangular in plan with near vertical sides and a flat base. It measured 0.92m north-south and if it was the same feature as [1752], then it would have measured c. 1.80m east-west. It was up to 0.30m deep with the basal level at +1.35m OD. Cut [1752] was overlain by a firm, dark greyish brown sandy silt [1851] just 60mm thick, which appears to have acted as a levelling deposit for a basal timber lining [1751]. This was very fragmentary and only survived in the northeast corner of the pit. To the west, a better preserved timber lining [1651] was recorded resting directly on the base of cut [1652]. This would originally have comprised three, east-west aligned timber planks, located side by side, each about 0.27m wide. Only the southern two planks, however survived. The pit was backfilled with a soft and friable dark to mid grey sandy silt with greenish patches [1650], which contained a small quantity of domestic and industrial waste including, pottery, clay tobacco pipe, CBM (broadly dated to c. 1630-1850) and metalworking slag. A comparable deposit was recorded to the east as [1667]. Although interpreted by the excavator as a possible tanning pit, this feature appears more likely to have been a cess pit. Immediately to the west of pit [1652] was a NNW-SSE aligned cut [1684], up to 2.30m in length, 0.45m wide and 0.20m deep, with vertical sides and a flat base, at a lower level of +1.48m OD. Truncated to the south, it appeared to run into Phase 13 pit [1686], before turning to the west as cut [1690], which extended for a further 0.75m before running into Phase 13 cess pit [1695]. It had originally been brick-lined [1689], though only two bricks survived at the time it was recorded. Both parts of the cut were filled with a moderately compacted, mid grey sandy silt [1688]/[1683], which contained abundant building rubble. To the north of Phase 13 pit [1695] was an east-west aligned cut [1658] which extended for 2.05m east from the western edge of excavation before being truncated by later activity, 0.85m wide, with vertical sides, but it was not bottomed. It was filled with a loose, mixed brown sandy silt with abundant building rubble [1657]. The feature was interpreted as a drain, though it

was not clear with which other features it was linked. Immediately to the north was a feature that truncated the Phase 13 brick drain [1663]. This comprised a rectangular cut [1662], which had vertical sides and a base that was flat in the centre but sloped downwards towards the sides. The flat part of the base was at an elevation of +1.07m OD though this dropped to as low as +0.96m OD at the edges. The cut measured 1.50m north-south by 1.34m east-west and was up to 0.81m deep. Within the cut was a lining [1661] comprising frogged, pinkish purple bricks, mostly stretcher lain, with occasional headers and bonded with a loose, orangey, sandy mortar. It stood up to 0.79m high and was at an upper level of +1.82m OD. Between the edge of the construction cut and the brick lining was an infilling of loose, mid greyish brown sandy silt [1660]. On the base of the cut was a floor [1720] constructed from horizontally lain, reddish tiles, each measuring c. 258mm x 150mm x 12mm and bonded with a pale yellow, silty sand, measured at an upper level of +1.13m OD. Above this was a secondary floor [1700], constructed from reddish orange tiles, each measuring 264-278mm x 155-160mm x 14mm, bonded with a loose, pale orange sand. This was at an upper level of +1.16m OD. The lined pit was backfilled with a loose, mixed brown sandy silt containing abundant building rubble and some modern material.

7.15 PHASE 15: LATE 19TH – 20TH CENTURIES (Figure 22)

- 7.15.1 In the Building 1 excavation area phase 15 was characterised by a small number of features and deposits, mostly located in the southwest corner of the site. Located within this area was a possible mortar floor surface [237], comprising a weakly cemented and friable, light yellowish brown (greyish in places) mortar, which included occasional CBM fragments and charcoal flecks. It was present over an area measuring 3.10m east-west by 1.65m north-south, was 60mm thick and recorded at an upper surface level of +1.88m OD. It was overlain by up to 0.28m of friable, dark brown sandy silt [236], interpreted as made ground or garden soil and recorded at an upper elevation of +2.04m OD. CBM recovered from this deposit dated no later than the mid 19th century. At the southern edge of the excavation area it was truncated by a 19th century well or soakaway. This comprised a sub-circular cut [235], measuring up to 1.72m in diameter, and at an upper elevation of +2.01m OD, though it had evidently been truncated by later building activity. It had vertical sides but was not bottomed. The cut had a brick lining [234] comprising of orange frogged and unfrogged bricks and half bricks, irregularly coursed and apparently unbonded. They formed a circular structure, one brick wide, the upper ten courses of which were exposed. The feature was backfilled with a friable, dark grey sandy silt [233], dated by the pottery contained within to 1825-1840 and CBM to no later than 1850, though a single fragment of clay tobacco pipe was present which dated 1840-1880. A

little over 2.5m north of this feature was a fragment of east-west aligned wall. A 1.15m length of a linear construction cut [288] was present, which was 0.57m wide and just 90mm deep, with vertical sides and a flat base (elevation +1.92m OD). Within the construction cut was an uneven, header coursed wall [275], constructed from unfrogged red bricks, up to 165mm x 105mm x 60mm, bonded with a soft, grey, slightly sandy lime mortar. The wall only survived to three courses high and its function was unclear. It appeared to be unrelated to the Phase 13/14 structure to the east and was interpreted by the excavator as a possible external garden wall. A short distance to its north and extending for more than 5m to the west was a linear cut [355], measuring approximately 1m wide and 1.4m deep, with concave sides and base. It was at an upper elevation of +1.66m OD and was backfilled with a moderately compacted, mottled mid greyish brown and dark grey/yellowish brown sandy silt containing abundant building rubble, including post-1870s bricks. Also during this phase the backfilling of Phase 12 tanning pit [483] appears to have been completed: Overlying layer [491] was a moderately compacted, mottled bluish grey medium sand [490], up to 0.20m thick. This in turn was overlain by up to 0.35m of moderately compacted, grey brown silt containing frequent building rubble. The sequence was capped by deposit [488], a moderately compacted, mottled brown medium sand, up to 0.16m thick.

- 7.15.2 The most extensive feature belonging to this phase in the Building 5 excavation area was an east-west aligned wall [759] at the northern edge of the site. It consisted of a number of irregularly-spaced brick pillar bases connected by sections of brick wall. Red and purple unfrogged bricks measuring c. 230mm x 105mm x 65mm were mostly employed, though some yellow bricks were also recorded. Coursing was mostly with alternating headers and stretchers, though irregular in places, and the bricks were bonded with a light grey to white sandy mortar. The pillar bases generally measured c. 0.60m x 0.60m and most of the wall sections were 0.34m wide. However, the westernmost wall was 0.58m wide and its eastern neighbour was of stepped construction, with the base being 0.60m wide and the upper levels 0.33m wide. A 13.60m length of this feature was recorded, which included seven pillar bases and seven wall sections. The upper elevation varied between +2.76m OD and +2.71m OD. A north-south aligned wall [753] of possibly similar construction (though heavily truncated by later intrusions) was recorded at the western edge of the trench, the upper elevation was at +2.84m OD. The walls appear to have been structural components of the vinegar factory.
- 7.15.3 In the Gatehouse excavation, phase 15 was marked by a small number of alterations to the vinegar factory complex. Towards the south of the excavated area, Phase 14 wall

[1702]/[1704] was strengthened by the addition of further brickwork [1703] on the eastern side. This comprised up to six courses of machine-pressed, red, frogged bricks laid in a stretcher bond and bonded with an indurated, light grey lime mortar. The eastern face was also rendered with a light brownish grey plaster. The brickwork was at an upper elevation of +1.80m OD. Towards the north was an 'L-shaped' segment of wall [1675], which abutted the western edge of wall [1673] and the northern edge of wall [1674] to the east. It ran for 2.60m to the west, turned to the south for 1.45m and abutted the northern edge of wall [1702]. It was constructed of unfrogged bricks, laid in alternating courses of all stretchers and headers/stretchers, with the lower three courses stepped out. It was up to 0.50m wide and stood eleven courses high, at an upper elevation of +2.02m OD. It appeared to form part of a corner of a vinegar factory building and was probably originally part of the same wall as north-south feature [1676] though a modern drain run had destroyed this relationship. Wall [1676] was built from unfrogged bricks, laid in the same alternating courses as wall [1675] and also stepped in the same manner towards the base. It extended for at least 2m northwards, continuing beyond the northern limit of excavation, it was 0.50m wide and up to eleven courses survived, at an upper level of +2.25m OD. Butting onto the western edge was a small brick construction [1680] measuring 1.00m north-south by 0.35m east-west and standing just 0.25m high. It was built from unfrogged bricks, laid in alternating rows of headers and stretchers and bonded with a white, sandy lime mortar. To the west of the building was a square, drain inspection pit that cut Phase 14 cess pit [1662]. It comprised a square pit [1656] measuring 1.90m east-west by 1.90m north south, with vertical sides and cut from an apparent upper level of +2.15m OD (it was not bottomed). Within the cut was a lining formed of irregularly coursed, frogged bricks, bonded with a pale yellow, sandy mortar [1655]. The gap between the edge of the cut and the brick structure was infilled with a loose, mid brown sandy silt [1654] that included frequent building rubble. The pit was backfilled with a loose, mid brown sandy silt [1653] that contained moderate amounts of building rubble, including some modern material.

8 ORIGINAL AND ADDITIONAL RESEARCH OBJECTIVES

8.1 ORIGINAL RESEARCH OBJECTIVES

8.1.1 The written schemes of investigation, prepared before the commencement of the various phases of archaeological fieldwork, raised a number of research objectives that might be addressed by the project:

8.1.2 **What is the potential for Palaeolithic and/or Mesolithic activities being recorded in the Terrace Gravels or Sands?**

8.1.2.1 The basal natural deposits recorded across most of the site were sands associated with the formation of the Horselydown Eyot, rather than Thames Terrace Gravels. No Palaeolithic material was recovered, however a number of flint artefacts demonstrated an affinity with Mesolithic technologies, though these were all recovered residually from later contexts.

8.1.3 **What is the nature of the later prehistoric activity at the site and how does it relate to other contemporary sites on Horselydown Eyot and other island sites in the vicinity?**

8.1.3.1 At least three broad phases of later prehistoric activity were identified, extending from the Neolithic to the later Iron Age. The earliest phase was represented by a number of features, namely pits/postholes, stakeholes and linear features, which were recorded in Buildings 1, 5 and 6. A small number of features were also recorded during the Building 2 watching brief and in Trench 1 of the initial evaluation. The evidence from Building 1 was particularly concentrated and comprised mostly large numbers of stakeholes. Patterns were difficult to define and no obvious structures were apparent. It seems more likely therefore, that a series of fencelines were represented, and given the number of features, these may have been established over a number of sub-phases. The small pits/large postholes may have been evidence of rudimentary structures, though again clear patterns were not obvious. The few apparent linear features excavated, particularly towards the north of the site, suggest that some type of basic water management scheme was in operation during this phase.

8.1.3.2 The features dating to this earlier phase of prehistoric activity were mostly sealed by deposits of reworked natural sand, suggesting a possible hiatus in occupation of the area. These sealing deposits were cut by a number of features dating to the second phase of prehistoric occupation. The most distinctive element of this phase was the

large number of ard marks recorded across the area occupied by Building 1 and in the Building 2 watching brief area. These provided clear evidence of agricultural activity on the site, probably in the later Neolithic/ Early Bronze Age period. A number of stakeholes and postholes appear to have been contemporary with the ard marks and a group of such features recorded in Building 6, may have represented a rudimentary structure. Possible contemporary pits were also recorded in Building 6 and The Gatehouse, and a possible well recorded in Building 1 may also have been utilised during the same phase.

- 8.1.3.3 The third prehistoric occupation phase was characterised by a more scattered arrangement of features. WNW-ESE aligned channels were identified in Buildings 5 and 6 and have been interpreted as drainage features. A further possible channel, apparently of this phase was also identified in the Building 3 watching brief. In Building 1 a number of the ard marks were truncated by stakeholes and postholes, though no obvious patterns in the arrangements of these features were observed, so the nature of any built structures in the area is unclear. Indeed they may have represented fence or boundary lines rather than formalised structures. Soil formation recorded at a number of locations across the site may have been contemporary with this phase of activity or it may have been slightly later, stratigraphic relationships were not clear on this issue. What is clear however is that towards the end of the prehistoric period, the southern sector of the site at least, became inundated and experienced alluvial deposition as the level of the Thames rose, and there was a subsequent hiatus in occupation of the area.
- 8.1.3.4 Evidence of prehistoric activity, comparable to that on the site has been identified at a number of locations, both on the slopes of the Horselydown Eyot and beyond. Contemporary Mesolithic material has been seen at 1-2 Three Oak Lane, 10-16 Lafone Street and 241-247 Tooley Street on the northern slopes of the Horselydown Eyot. To the south and southeast, comparable material has also been found at 283 Tooley Street and 285-291 Tooley Street. To the southwest, further Mesolithic material has been recorded at 217-219 Long Lane on the Bermondsey Eyot. Comparable Neolithic activity has was present at Lafone Street, and at Wolseley Street, some 500m east of the Tower Bridge Road site, where similar patterns of ard marks have been recorded, providing more extensive evidence of the prehistoric agricultural exploitation of the sandy islands. Other Neolithic features were recorded at Three Oak Lane and flints exhibiting a Neolithic technology were recovered a little further east at Queen Elizabeth Street. There has also been evidence for Bronze Age activity on the North side of the Horselydown Eyot at Lafone Street and Three Oak Lane where occupation horizons, postholes and ditches of this date were evident. At Brunswick Court, immediately to the

west of the study site, a possible Bronze Age occupation horizon was identified and at 33 Tanner Street, immediately to the south, a feature interpreted as a Bronze Age cooking pit was found. A further ditch, bank and posthole were recorded at 49-51 Tanner Street, to the southeast. Evidence of Iron Age activity is less widespread, being mostly restricted to sites on Tooley Street, on the northern slopes of the Horselydown Eyot, as it appears that rising waters had already impeded much activity of this date.

8.1.4 Is there evidence for occupation e.g. house circles, pitting, animal husbandry throughout the periods of prehistoric activity? If so, is it possible to determine zones of activity, such as domestic occupation, slaughtering and cooking?

8.1.4.1 Evidence for actual prehistoric occupation structures was slight. A number of stakeholes and postholes may have been elements of rudimentary structures of both Neolithic and Bronze Age date, but there was certainly no evidence for more substantial buildings, such as later prehistoric roundhouses. There was some evidence of pitting, again probably predominantly Neolithic and Bronze Age in date, though the functions of the various pits, whether they were for domestic or other purposes, were inconclusive. A small amount of animal bone was recovered, suggesting that there was some animal husbandry or processing of animal products, and some of the postholes and stakeholes may have represented animal pens. The most substantial evidence, however, and particularly for second broad prehistoric phase, was that of arable agriculture. The ard marks were evidence for rudimentary tilling of the soil and some of the linear features recorded, may have been agricultural drainage or boundary ditches. It is difficult to determine zones of activity, especially given the slightly haphazard nature of the evidence, although the southern half of the site was given over to arable agriculture, at least for a short while.

8.1.5 Can any of the features be considered to be of ritual function? If so, what is the evidence for such interpretation?

8.1.5.1 It is very difficult to determine whether there was any prehistoric ritual activity on the site. No obviously ritual deposits were recorded, though the possible well recorded in Building 1 could have served a ritual purpose. However no finds were recovered from the feature to add any support to this notion. It should be noted that ard marks have elsewhere on occasion proven to have had a ritual purpose rather than a purely practical agricultural connotation. On these occasions they appear to have served to denote areas of liminal space (Bradley 2005).

8.1.6 Do any palaeochannels cross the site and if so, what effect did they have on the areas of human activity? Is there any evidence for modification of the waterways?

8.1.6.1 No clear evidence for any palaeochannels was recovered from any of the main excavation areas, though anomalies in the depths of various deposits recorded in the Building 2 and Building 3 watching briefs towards the south of the site, may have been due to infilled palaeochannels being present. Previous work in the area has clearly suggested a large channel between Horselydown Eyot to the north and Bermondsey Eyot to the south. It is also possible evidence for palaeochannels on the site was destroyed by the substantial ditches excavated during the early post-medieval period as part of the widespread drainage scheme.

8.1.7 Is there evidence for artefact deposition within palaeochannels? Can such depositions be considered to be casual loss, opportunistic dumping, or to have a ritual/magical significance?

8.1.7.1 As there was no clear evidence for palaeochannels on the site, it is impossible to determine whether there had been depositions in such features, nor to interpret the nature of any such depositions.

8.1.8 Is it possible to determine whether the topographic location and/or the underlying geological formations had any influence on site selection?

8.1.8.1 There is no direct evidence for site location being determined by topographic and geological factors, particularly as the wider, natural landscape topography is difficult to visualise with so much recent development in the vicinity of the site. However, it is well known from previous surveys and the current work, that the site lay on the southern slopes of the Horselydown Eyot, and therefore the early development would have been island-based. That arable agriculture was practised, suggests there was reasonable ease of access, probably both to other islands (such as the Bermondsey Eyot) and the 'mainland' south of the Thames. The site would probably have been attractive to early agricultural settlers because of its fertile soils, ease of access to water resources, and possibly also because of the security offered by a defendable island location. However, it is also clear that the site lay in a marginal location, susceptible to environmental fluctuations, particularly the changing levels of the Thames. For this reason, apparent abandonments in later prehistory and the post-Roman period can be put down to environmental determinism as a result of the low-lying topography and climatic fluctuation. It is uncertain on the current evidence whether the latter if germane would have been due to natural causes or be the result of the activities of man.

8.1.8.2 The limited drainage and reclamation of the area during the Roman period was probably for the same first two reasons as the prehistoric exploitation. However this appears to have been rather short-lived and was again, probably affected by environmentally deterministic factors. Late medieval/early post-medieval reclamation of the site was probably also influenced if not by geology by topographic location. During this period the site would have lain on raised ground, but in an area subject to periodic inundation. Such a location would have been attractive again for its ease of access to plentiful water resources, and also because of the growing necessity to meet the industrial needs of the expanding population of London, to the north of the Thames, in an area a convenient distance from the centre of domestic habitation.

8.1.9 Is there evidence for medieval activity on the site? If so, what is its significance and relationship to the nearby medieval Bermondsey Abbey?

8.1.9.1 There was negligible evidence for medieval activity on the site. Certainly the High Medieval period was only represented by one or two, stray, residual finds, so relationships with activity at Bermondsey Abbey could not be positively established. Land reclamation may have begun as early as the late medieval period, but even this appears to have been a predominantly post-medieval activity.

8.1.10 What evidence is there for post-medieval land reclamation?

8.1.10.1 Extensive evidence for post-medieval land reclamation was recorded across all of the main excavation areas. This began in the early post-medieval period, as evidenced in the Building 1 excavation, where a rather informal drainage system was used in order to create some workable dry land which appears to have had some limited success as a small number of contemporary features were recorded. However, this was quite short-lived and the area soon became inundated again. The response to this latest alluvial inundation was the establishment of a more extensive, formalised drainage network. This was most clearly demonstrated in Building 1 where a large north-south aligned 'main' drain was fed by a number of smaller, east-west aligned 'feeder' drains. Major north-south drains were also recorded in the areas of Building 5 and the Gatehouse, though a subsidiary network was less in evidence. In Building 6 there was some evidence for drainage during this phase, but it was less compelling than in the other areas. Unlike at a number of other sites in the vicinity, there was no evidence of large-scale wooden revetments within the major drainage channels (D. Goodburn, pers. comm.).

8.1.10.2 Once the area had been de-watered there was extensive dumping of materials across the site in order to infill the drainage network, raise and level the ground surface, in

order to create significant working areas. Various scales of industrial activity could then be carried out. However, there were indications that periodic flooding may still have taken place, as various later dumping and levelling episodes further raised the ground surface. Clearly there had to be a happy medium between a dry site and access to plentiful water supplies for various industrial processes.

8.1.11 What is the evidence for post-medieval industrial practices at the site? How do they compare or contrast with others known in the vicinity?

8.1.11.1 There was extensive evidence across the site for a number of phases of industrial activity. In the area of Building 5 and the Gatehouse there was some evidence for structures being established immediately following the first major reclamation phase, though their functional interpretation was difficult to establish, and their existence was short-lived. However a short while later much of the site, indeed much of the surrounding area, appears to have been taken over by the leather industry, in particular the tanning processes involved in that industry. The earlier phase of the tanning and tawing industry on the site appears to have been carried out in relatively ordered groups of circular to oval pits, which were identified in most of the main excavation areas. However, as the industry became more intensive and formalised structures were developed to house multiple, lined sub-rectangular tanning pits and tanks. Tanning was the dominant industry on the site until the buildings were taken over by the vinegar industry in 1814. It appears that tanning may not have been the only industry either on the site or in the near vicinity, prior to 1814. The finding of large numbers of clay tobacco pipes, including wasters and possibly small dumps of unfired pipe clay, suggests that the manufacture of clay tobacco pipes was carried out nearby.

8.1.11.2 The vinegar manufacturing industry initially used the buildings vacated by the tanning industry but gradually these buildings became extended, modified and some replaced as production developed. The excavations revealed at least three broad phases of growth, which in reality probably amounted to numerous sub-phases of development in individual areas. The buildings surveys carried out in 1992 and 1997 (GLIAS 1992; Hall *et al.* 1997) also demonstrated that there had been multiple phases of expansion and change up to (and in some instances, beyond) the closure of the vinegar factory in 1992.

8.2 ADDITIONAL RESEARCH OBJECTIVES

8.2.1 In the light of the findings from the excavation it is clear that the archaeological evidence has fulfilled some of the original objectives whilst others have been found to be of lesser

importance than originally suggested. The excavation has also produced additional information. It has thus been necessary to formulate a set of Revised Research Objectives.

8.2.2 Is it possible to more closely date and define the prehistoric activity on the site, and therefore provide a more accurate picture of developments in later prehistory in both temporal and spatial terms?

8.2.2.1 Extensive evidence of prehistoric activity was identified in a number of areas across the site and this has been broadly divided into three main phases. However, this is clearly an over-simplification as there were probably extended periods of occupation, involving a number of sub-phases, interspersed with periods of inactivity. It is clear that activity pre-dated that associated with the ard marks and there was also later activity. This is indicated by limited stratigraphic evidence. However, there are generally few stratigraphic relationships between prehistoric features and many occur in isolation. Furthermore, very few of these features have produced accurate dating evidence. For these reasons, the rather tentative, three phase division of prehistoric activity has been adopted.

8.2.2.2 However, by further analysis of distribution patterns of features, analysis of the dating, function and distribution of finds, and the application of relatively simple logic, it should be possible to derive a more accurate picture of developments through the Neolithic and Bronze Age periods. Subtle observations, such as the notion that stakeholes and ard marks in the same area are unlikely to have been contemporary, have already been made. Further deductive analyses along these lines and incorporating the finds data, should permit a more detailed understanding of later prehistoric activity on the site and its development through time.

8.2.3 Can the development of the tanning industry on the site be more accurately defined in spatial and temporal terms? Can the function of the numerous features associated with the tanning industry be defined and can models demonstrating the sequences of processes during different phases be formulated?

8.2.3.1 Numerous features apparently associated with the tanning (and possibly tawing) industry have been identified on the site. The function of some of these, such as the later large tanning pits has been reasonably straightforward to determine. However, there are numerous features whose function has been rather less apparent. Some of the earliest post-medieval features on the site may be associated with early tanning activity, and likewise some later, smaller features may be associated with aspects of the industry but not directly with tanning itself.

8.2.3.2 In order to further define the nature and development of the tanning industry on the site, further research is required both into the history and development of the leather working industry and into the sequences of processes involved in transforming raw animal hides into a useable commodity. Such research needs to concentrate on historical and technical records, contemporary accounts and on archaeological parallels.

8.2.4 Can the findings from the various archaeological interventions be tied in with the records from the earlier standing building surveys? If so, can the archaeological record be used to further enhance our knowledge of the later industrial development of the site?

8.4.2.1 Previous surveys of standing buildings on the site (Hall *et al.* 1997; GLIAS 1992) have provided accurate descriptions of the later industrial buildings and their functions. These surveys have also permitted a limited insight into the nature of earlier buildings, particularly those that were re-used during later phases. Clearly the remains of some of these buildings were also recorded during the archaeological excavations and it should be possible to tie the records together in order that the building surveys can inform archaeological interpretations.

8.4.2.2 Clearly the standing building surveys were limited to surviving above ground remains, whereas the archaeological excavations permitted the recording of buried remains, including those associated with previously recorded standing structures and those for which no above ground evidence remained. In this way, the archaeological evidence may be used to further enhance the building development sequences interpreted by the standing building surveys.

9 IMPORTANCE OF THE RESULTS, PROPOSALS FOR FURTHER WORK AND PUBLICATION OUTLINE

9.1 IMPORTANCE OF THE RESULTS

- 9.1.1 The archaeological remains at 169 Tower Bridge Road are of importance at a local and possibly a regional level. The evidence has mirrored that from a number of other sites in the vicinity, particularly those, like the study site, originally situated in island locations. The evidence has shown that there was activity on the site during the later prehistoric period, which gradually became untenable as sea levels rose. Following a period of abandonment there were limited attempts during the Roman period to reclaim the land, but these ultimately ended in failure. It was not until the late medieval/early post-medieval period that successful reclamation of the area permitted activity to resume. The area then became rapidly industrialised, with the leather processing industry becoming dominant. Evidence for this was extensive at 169 Tower Bridge, though there was also clay tobacco pipe manufacture in the very near vicinity. It is well documented that the site was taken over by the vinegar industry in 1814 and remained as such until the late 20th century. The physical remains of this and earlier industries have been recorded by previous standing building surveys and more extensively by the phases of archaeological intervention.
- 9.1.2 Until relatively recently the prehistory of north Southwark went virtually unnoticed as it was generally assumed that only natural deposits lay below Roman levels. It is clear now though, that there was extensive activity, at least in the later prehistoric period, in this area and 169 Tower Bridge Road has proved to be no exception. The lithic evidence suggests temporary activity on the site as early as the Mesolithic period, but there was certainly more intensive occupation from the Neolithic to the later Bronze Age, and into the Iron Age. Early ditches on the site probably represented drainage or boundary features though the function of numerous other small features remains unclear. These may have been associated with temporary structures of a domestic or agricultural function.
- 9.1.3 The clearest features of prehistoric date were the ard marks located in the southern half of the site. These provide unequivocal evidence for arable agriculture on the site in the Late Neolithic/Early Bronze Age period. They are important in showing that such activity was taking place in the local area. However, they are also important at a wider level. Such features are rarely recorded on excavations in London, but they are not unknown, indeed such features have been recorded on the north side of the Horselydown eyot.

They add important evidence to a growing body of information about early agriculture in the lower Thames Valley and Estuary, and particularly that carried out in more marginal, island locations. What is also important is the apparent short timescale over which the arid marks were formed. Within a few years, tilling of the soil on the site appears to have ceased, however, the area was not abandoned as further ephemeral structures are recorded. It is possible that the soil quickly became exhausted in terms of arable potential but the area still remained a viable location for occupation. Again these factors are important at the local and wider, regional level in terms of later prehistoric activity and population dynamics.

- 9.1.4 The evidence for apparent site abandonment in the Iron Age because of rising water levels is of interest at the local level and reflects the wider body of evidence for environmentally determined population shifts in later prehistory across more marginal areas of the lower Thames Valley.
- 9.1.5 Although somewhat sparse, the evidence for Roman activity on the site is important at the local level. The main concentrations of activity south of the Thames during the Roman period were in the current London Bridge and Borough High Street areas. However there is also limited evidence of activity on the more marginal areas of the Horselydown and Bermondsey Eyots. The evidence from 169 Tower Bridge Road adds to this body of information and demonstrates that there was activity on the islands during the Roman period, and that it may have been enabled by small scale reclamation projects. This suggests an importance must have been placed on these island locations, possibly in terms of security and/or fertility of the soil, or some other factor(s).
- 9.1.6 The evidence for medieval activity on the site was minimal. For much of the post-Roman and medieval period the site was probably flooded or uninhabitable marshland, and there was certainly no occupation associated or contemporary with that at the nearby Bermondsey Abbey. However, a small number of finds in later contexts may have derived from features associated with the Abbey.
- 9.1.7 The evidence for late medieval/post-medieval reclamation is also of local importance as it adds to the body of evidence for widespread land reclamation in the area at this time. Initially on a small scale and with limited success, reclamation proceeded at 169 Tower Bridge Road, as it did in much of the surrounding area. The initial schemes were replaced by larger scale drainage networks, also evidence at a number of other sites. Although in common with other sites, large drainage channels were recorded on the study site, they did not include the large wooden revetments recorded elsewhere.

9.1.8 The evidence for post-medieval industry adds to the substantial body of information concerning the leather processing and other industries recorded in the near vicinity. However, because of the nature of the project it has been possible to trace industrial development on the site over a period of time. It has also been possible to identify a number of features over a wide area, associated with industrial processes. With further research a clearer picture of temporal and spatial industrial development on the site should become apparent. The site is therefore of local and possibly regional importance in terms of the potential it has to demonstrate industrial development within a limited area over a period of perhaps hundreds of years.

9.2 FURTHER WORK

9.2.1 The findings from the site have produced evidence of a number of phases of human activity. The earliest evidence comes from Mesolithic artefacts recovered residually in later contexts. However, there was clear evidence for occupation of the site during a number of phases during later prehistory. Thus far this activity has been simplified into three broad phases. Further work is required to refine the later prehistoric sequence on the site. This will require a more detailed analysis of patterns and distributions of features allied with an integrated assessment of the finds assemblages. It is hoped this will facilitate a more detailed picture of site development from the Neolithic to later Bronze Age (or even Iron Age).

9.2.2 The evidence for activity on the site during the Roman period was limited. However, what there is is important as it provides information for the utilisation of marginal land away from main population centres at this time. The evidence should therefore be looked at in comparison with that from other nearby sites in order to develop a greater understanding of activity in the hinterland of Roman Southwark.

9.2.3 The evidence for activity throughout the post-Roman and much of the medieval period was negligible as the area was probably uninhabitable at this time. No further work is required on this period in relation to the site, though residual finds originally of medieval date will need to be included in the relevant finds reports (see below).

9.2.4 In the late medieval/early post-medieval period attempts were made at small scale reclamation of the land on the study site. These were followed shortly afterwards by the establishment of much larger, more formalised networks of channels, established to dewater the area and as a precursor to ground raising, levelling and reclamation. There appears to have been a sequence of events leading to the final reclamation of the land on and around the site. Further work is needed in order to more accurately define this

- sequence within a dated timescale. Reference also needs to be made to similar features recorded on nearby sites in order that the reclamation of the study site can be placed within the broader context of the re-utilization of the Horselydown Eyot.
- 9.2.5 From quite early in the post-medieval period the site appears to have been used for industrial purposes. This industrialisation developed throughout the post-medieval period and by the late 18th century large scale tanning processes had been established. In the early 19th century this gave way to the vinegar manufacturing industry, which dominated the site until the later 20th century. The sequence of industrial development of the site should be further defined, particularly earlier, undocumented phases. The full sequence also needs to be considered alongside contemporary developments exposed by nearby archaeological interventions and with regard to documentary and contemporary accounts.
- 9.2.6 There is a large lithic assemblage that includes a great deal of residually deposited material. However the earlier (Mesolithic) material is the only available evidence for occupation of the site at this time, and the Neolithic and Bronze Age material is important for the discussion and phasing of the later prehistoric development of the site. There is also an intriguing assemblage of apparent post-medieval worked flint. It is therefore recommended that the assemblage should be examined in more detail and described for publication, alongside illustration of relevant pieces. Further analysis should be concerned with a number of factors including spatial distribution, technology and chronology. The publication should also include some consideration of local geology, raw material sources and previous finds and research in the local area.
- 9.2.7 The large assemblage of burnt stone should also be considered in more detail, with further analysis of the spatial distribution of the material and an assessment of its likely functional attributes. This information should also be included in the publication report.
- 9.2.8 The prehistoric pottery assemblage comprises mostly fragmented and/ or highly abraded material and its research potential is limited. The single priority is fabric analysis. Firstly, in order to assess the possible overlap between the Tower Bridge Road Late Bronze Age fabrics and pottery traditions belonging to earlier periods, which may have chronological implications for a number of 'Neolithic/ Early Bronze Age' sites in the vicinity (or vice versa). For these implications to be fully realized, a detailed characterization of the fabrics will be required. Secondly, a relatively small amount of Late Bronze Age pottery from the immediate area has been characterized in this way, and the Tower Bridge Road assemblage, although small, would add usefully to our overall knowledge of it. No illustrations are required.

- 9.2.9 The Roman pottery assemblage is quite small and not of great significance. It does not therefore warrant a separate report in the publication. The information contained in this assessment can be integrated with the stratigraphic discussion and the archive should be signposted in the publication text. It will however, be necessary to include a small number of pottery illustrations in the publication report.
- 9.2.10 Any future publication work should include a report on the medieval and post-medieval pottery recovered. Pottery from previous excavations of the site should also be incorporated in the publication text. The report should also include a number pottery illustrations and photographs.
- 9.2.11 The building material assemblage has already been studied in some detail and further analysis of the material is unnecessary. However, the publication report should include a detailed discussion of the assemblage and should be integrated with discussions concerning the structural development of the site. There are also some notable stone objects that require further individual discussion and illustration as necessary.
- 9.2.12 The clay tobacco pipe assemblage is an important one and warrants a full report in the publication text. The clay tobacco pipes have the potential for use as a dating tool and there is some evidence for the typological and local development of the different types of bowls in the site stratigraphy. A number of clay tobacco pipes merit illustration or photographing, either because they are non-local rare finds in London or are variants of the usual type. The clay tobacco pipe production waste greatly adds to the knowledge of this industry in London and can add to the understanding of associated technology involved in the process of making clay tobacco pipes. Further research on the assemblage from the site should be directed towards a number of aims including: profiling of the typology and a comparison with other local and London sites; refining the dating of 18th century marked bowls through careful examination of the site stratigraphy; extrapolating information from production waste in order to inform upon the technology of the early 18th century clay tobacco pipe industry in London; an examination for evidence of quality control and; measurement of stem bore diameter in order to refine the deposition dating of the clay tobacco pipe production waste recovered from specific contexts.
- 9.2.13 At least 23 clay tobacco pipe bowls require illustration and photographs should be used to illustrate the kiln furniture and ring trimming and firing faults. Time should also be allowed for stem bore diameter dating for fills [328] and [340] of pit [329]. Additional

- documentary research would be useful to expand upon the working dates of the master clay tobacco pipe makers.
- 9.2.14 The small finds and metalwork assemblage makes a significant contribution to the understanding of the site, and should be included in any further publication. The assemblage of knives brings valuable insights into the material culture of the early modern and post-medieval household; this category should be viewed together with other tableware and household equipment, such as pottery and glass. The bead-making waste indicates possible earlier activity on the site; this material needs to be analysed further and related to our increasing understanding of bead-making and bead products in the late medieval and early modern periods. For the purpose of further work a group of ironwork requires further x-ray. The coins and jetton should be cleaned for identification where appropriate, and cleaning and/or further identification is also recommended for the 19th-century silver knife. After full assessment, the large amount of mostly incomplete iron nails and undiagnostic iron fittings can be mostly discarded.
- 9.2.15 The glass assemblage as a whole is too fragmentary to be worthy of full report. It is suggested that the urinal fragment be highlighted, if necessary, but to carry out no further work on the remainder of the glass.
- 9.2.16 The slag and industrial residue assemblage requires limited further work. Any samples with hammerscale, particularly if from the iron working area in TWG 00, Phase 14, need to be further examined. If a focus of smithing relating to TWG 00 Phase 14 can be located during, further work might be required to integrate and interpret the slag for publication. No further work is recommended on the rest of the assemblage.
- 9.2.17 The timber assemblage requires a short summary report to be produced for publication. This should include references and illustrations of selected material. No further work is required on the assemblage itself.
- 9.2.18 The animal bone assemblage can potentially provide a wealth of information concerning the history of the various noxious animal product based industries in this part of North Bermondsey. Topics of interest include the tawing and tanning industry, horse knacker and glue boilers. The faunal remains report (Appendix 12) emphasises the close links between these various industries and it is highly recommended that further information be sought to better explain these ties. Any further work should include an analysis of age and size data, examining the possibility of selection, for example, for particular hides or sheepskins. However, as well as the industrial aspects, there is also the evidence for food use. Discerning the food waste data will be easier amongst the assemblages either

side of the late 17th/18th century phases, although even these phases did produce several collections which are clearly related more to food than industrial waste. The object of this exercise will be to determine food preferences and/or the nature of the supply network provisioning this area during the post-medieval period.

- 9.2.19 A number of environmental samples contained well-preserved, waterlogged seeds from a range of plants and were deposited in features where seeds might become deposited naturally from the surrounding area (such as ditches and gullies). The pits might not be so useful as they may contain back fill from an unknown source of seeds or from plants imported from abroad or locations away from the immediate area of the site. Edible fruits were observed in many samples. Some of these could also have had medicinal uses and some could be linked to trade. Charred material was recovered from some contexts and could also provide useful information about diet. A number of samples are therefore recommended for further plant macrofossil analysis.
- 9.2.20 Many of the samples contained identifiable charcoal. A number of these are recommended for further analysis: Further identification will give information on the types of trees used to fuel fires. Roundwood fragments are scarce so it is unlikely that these samples can add any useful information to studies of woodland management.
- 9.2.21 Several of the samples produced botanical assemblages reminiscent of the deposition of domestic refuse or cess. Further analyses of these is proposed and could help clarify the use or disuse of the features.
- 9.2.22 Due to the generally poor pollen, diatom and Mollusca concentrations in the column and bulk samples no further analysis of these materials is recommended.

9.3 PUBLICATION OUTLINE

- 9.3.1 The excavations carried out at 169 Tower Bridge Road should be published as an article in a local journal, such as the Surrey Archaeological Collections.

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THE ARTEFACTS	
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Building materials	6 boxes + 2 gravestone slabs
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Clay tobacco pipe	19 boxes
Slag and metalworking residue	5 boxes
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Other small finds	4
Leather objects	5
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THE ENVIRONMENTAL ARCHIVE	
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11 ACKNOWLEDGEMENTS

- 11.1 Pre-Construct Archaeology Ltd. would like to thank Jeff Tomlinson of Sunlight Projects Ltd. for commissioning PCA to undertake the work and who made provision for plant and accommodation.
- 11.2 Thanks also to the Borough Archaeological Officers, Kim Stabler and Sarah Gibson for their help and advice during the various phases of investigations.
- 11.3 Thanks are due to the project managers Gary Brown, David Divers and Jim Leary, and Frank Meddens for post-excavation management and support. Further thanks are extended to the supervisors of the various phases of work, Cassian Hall, Tim Bradley and Chris Pickard.
- 11.4 The author would like to thank all members of the post-excavation assessment team who have contributed to this report: Barry Bishop, Nick Branch, Kevin Hayward, Chris Jarrett, Louise Rayner, Jean-Luc Schwenninger, Berni Sudds and Alice Vaughan-Williams. Also many thanks to Josephine Brown and Hayley Baxter for their work on the illustrations in this report; to Nathalie Barrett, Giles Hammond and Dan Waterfall for surveying; to Cheryl Blundy and Richard Young for photography; to Dianne Dobson, Märit Gaimster and Rob Nicholson for finds processing and to Chris Rees and Graham Sherwood for environmental processing.
- 11.5 Finally, thanks to all those who worked on the site, whose contribution is greatly appreciated: Richard Archer, Andrew Banyasz, Hayley Baxter, Tony Baxter, Mike Bazley, Glyn Bevan, Stelle Bickelmann, John Brown, Mark Chesterman, Helen Clough, Mary Ellen Crothers, Strephon Duckering, Gary Evans, Anne George, Steve Graham, Neil Hawkins, Stuart Holden, Michael House, Fiona Keith-Lucas, Adam Lask, Becky Lythe, Roddy Mattinson, Chris Mayo, Dominic McLelland, Nicole Nichols, Victoria Osborne, Ashley Pooley, Chris Rees, Hanne Rendall-Wooldridge, Ben Reynolds, Kathelen Sayer, Guy Seddon, Dan Slater, Aidan Turner, Justin Wiles and Elliott Wragg. Thanks also to Dave Dobson and Lisa Lonsdale for technical support.

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APPENDIX 1

CONTEXT INDEX

Site Code	Ctxt. No	Type	Co-ords	Plan	Section	Sample No.	Date	Phase	Photo No.	Description
TBI01	1	Layer	TR	N/A	1	N/A	19th C	14		19th century made ground
TBI01	2	Fill	TR	TR plan	1	N/A	18th C	12		Backfill of 18th century drain
TBI01	3	Cut	TR	TR plan	1	N/A	18th C	12		Cut of 18th century drain
TBI01	4	Fill	TR	TR plan	1	N/A	18th C	12		Fill of channel [6]
TBI01	5	Fill	TR	5	1	N/A	16th-17th C	10		Primary fill of channel [6]
TBI01	6	Cut	TR	6	1	N/A	Natural	1		Natural channel
TBI01	7	Fill	TR	N/A	1	N/A	18th C	12		Fill of channel [6]
TBI01	8	Fill	TR	N/A	1	N/A	16th-17th C	10		Fill of channel [6]
TBI01	9	Layer	TR	N/A	1	N/A	LIA	6		Late prehistoric alluvium
TBI01	10	Layer	TR	TR plan	1	N/A	Natural	1		'Dirty' natural sand
TBI01	11	Layer	TR	TR plan	1	N/A	Natural	1		Natural sand
TWG00	1	Fill	TR 1	N/A	N/A	N/A	17th-18th C	11		Fill of posthole [2]
TWG00	2	Cut	TR 1	2	N/A	N/A	17th-18th C	11		Sub-rectangular posthole
TWG00	3	Fill	TR 1	N/A	N/A	N/A	Neolithic	2		Fill of pit [4]
TWG00	4	Cut	TR 1	4	N/A	N/A	Neolithic	2		Circular prehistoric pit
TWG00	5	Layer	TR 1	5	3	N/A	Natural	1		Natural sand
TWG00	6	Fill	TR 1	N/A	N/A	N/A	Neolithic	2		Fill of pit [7]
TWG00	7	Cut	TR 1	7	N/A	N/A	Neolithic	2		Oval prehistoric pit
TWG00	8	Fill	TR 1	N/A	3	N/A	Neolithic	2		Fill of pit [9]
TWG00	9	Cut	TR 1	9	3	N/A	Neolithic	2		Oval prehistoric pit
TWG00	10	Layer	TR 1	N/A	1	N/A	20th C	15		Loose building rubble
TWG00	11	Layer	TR 1	N/A	1, 2	N/A	20th C	15		Recent basement backfill
TWG00	12	Layer	TR 1	N/A	1, 2	N/A	20th C	15		Recent basement backfill
TWG00	13	Masonry	TR 1	N/A	2	N/A	17th-18th C	11		N-S wall, mostly brick

TWG00	14	Masonry	TR 1	N/A	1, 2	N/A	17th-18th C	11	E-W brick wall
TWG00	15	Fill	TR 1	N/A	2	N/A	17th-18th C	11	Foundation cut packing, assoc. wall [13]
TWG00	16	Timber	TR 1	16	2	N/A	19th C	14	Timber floor boards
TWG00	17	Timber	TR 1	16	2	N/A	19th C	14	Joists supporting [16]
TWG00	18	Layer	TR 1	16	2	N/A	19th C	14	Bitumen below floor [16]
TWG00	19	Layer	TR 1	16	3	N/A	16th-17th C	10	Ground raising for slab
TWG00	20	Layer	TR 1	N/A	3	N/A	16th-17th C	10	Redeposited silty sand
TWG00	21	Fill	TR 1	N/A	3	N/A	17th-18th C	11	Fill of foundation cut [22]
TWG00	22	Cut	TR 1	N/A	3	N/A	17th-18th C	11	E-W foundation cut
TWG00	23	Masonry	TR 1	N/A	N/A	N/A	19th C	14	N-S brick wall
TWG00	24	Masonry	TR 1	N/A	N/A	N/A	17th-18th C	11	Basement wall
TWG00	25	Masonry	TR 1	N/A	N/A	N/A	17th-18th C	11	Basement wall
TWG00	26	Masonry	TR 1	N/A	N/A	N/A	17th-18th C	11	N-S brick wall
TWG00	27	Masonry	TR1	16	N/A	N/A	17th-18th C	11	Stone basement floor
TWG00	28	Fill	TR 2	17, 18	N/A	N/A	17th-18th C	11	Fill of ditch [51]
TWG00	29	Fill	TR 2	18	N/A	N/A	17th-18th C	11	Fill of ditch [51]
TWG00	30	Masonry	TR 2	17	19	N/A	19th C	14	Arched brick culvert
TWG00	31	Fill	TR 2	17	19	N/A	19th C	14	Fill of culvert [30]
TWG00	32	Masonry	TR 2	17, 18	19	N/A	19th C	14	Unclear brick structure
TWG00	33	Fill	TR 2	17, 18	19	N/A	18th-19th C	13	Domestic refuse and building rubble in brick structure [32]
TWG00	34	Cut	TR 2	17, 18	19	N/A	19th C	14	Construction cut for [32]
TWG00	35	Cut	TR 2	17, 18	19	N/A	19th C	14	Construction cut for [30]
TWG00	36	Layer	TR 2	N/A	19	N/A	15th-16th C	9	Dump of midden material
TWG00	37	Layer	TR 2	N/A	N/A	N/A	20th C	15	Modern tarmac
TWG00	38	Layer	TR 2	N/A	N/A	N/A	19th C	14	Cobbles below tarmac [37]
TWG00	39	Layer	TR 2	N/A	N/A	N/A	15th-16th C	9	Sandy layers
TWG00	40	Layer	TR 2	N/A	19	N/A	11th-14th C	8	Buried soil
TWG00	41	Masonry	TR 2	17	19	N/A	19th C	14	E-W brick wall
TWG00	42	Masonry	TR 2	17	19	N/A	19th C	14	Brick-lined drain
TWG00	43	Layer	TR 2	N/A	19	N/A	19th C	14	Made ground
TWG00	44	Layer	TR 2	17, 18, 20	19	N/A	Natural	1	Natural sand
TWG00	45	Layer	TR 2	N/A	19	N/A	20th C	15	Concrete slab
TWG00	46	Layer	TR 2	N/A	19	N/A	19th C	14	Demolition/made ground

TWG00	47	Masonry	TR 2	17	N/A	N/A	19th C	14	E-W garden wall
TWG00	48	Masonry	TR 2	17	N/A	N/A	19th C	14	NNE-SSW garden wall
TWG00	49	Fill	TR 2	N/A	19	N/A	15th-16th C	9	Fill of pit [51]
TWG00	50	Cut	TR 2	N/A	19	N/A	15th-16th C	9	Small pit
TWG00	51	Cut	TR 2	18, 20	N/A	N/A	15th-16th C	9	Large NNW-SSE ditch
TWG00	52	Fill	TR 2	17	N/A	N/A	18th-19th C	13	Fill of ditch [53]
TWG00	53	Cut	TR 2	18	N/A	N/A	19th C	14	NE-SW ditch
TWG00	54	Cut	TR 2	17, 18, 20	N/A	N/A	19th C	14	Possible posthole
TWG00	55	Layer	TR 2	17, 18, 20	N/A	N/A	19th C	14	Mixed rubble deposit
TWG00	56	Layer	TR 3	N/A	3	N/A	20th C	15	Concrete factory floor
TWG00	57	Layer	TR 3	N/A	3	N/A	19th C	14	Dumped deposit
TWG00	58	Fill	TR 3	N/A	3	N/A	19th C	14	Rubble basement infill
TWG00	59	Masonry	TR 3	N/A	3	N/A	19th C	14	Probable stone floor
TWG00	60	Layer	TR 3	N/A	3	N/A	19th C	14	Possible damp-proofing
TWG00	61	Fill	TR 3	N/A	3	N/A	19th C	14	Coal cellar deposit
TWG00	62	Layer	TR 3	N/A	3	N/A	19th C	14	Concrete floor
TWG00	63	Masonry	TR 3	N/A	3	N/A	19th C	14	E-W brick cellar wall
TWG00	64	Fill	TR 3	N/A	3	N/A	19th C	14	Coal in coal cellar
TWG00	65	Masonry	TR 3	N/A	3	N/A	19th C	14	Brick floor of cellar
TWG00	66	Layer	TR 3	N/A	3	N/A	19th C	14	Bedding for floor
TWG00	67	Masonry	TR 3	N/A	3	N/A	19th C	14	Brick floor support
TWG00	68	Layer	TR 3	N/A	3	N/A	19th C	14	Made ground
TWG00	69	Fill	TR 3	N/A	4	N/A	20th C	15	Drain pipe below floor [56]
TWG00	70	Cut	TR 3	N/A	4	N/A	20th C	15	Cut for drain pipe [69]
TWG00	71	Layer	TR 3	N/A	4	N/A	20th C	15	Bedding for floor [56]
TWG00	72	Layer	TR 3	N/A	4	N/A	19th C	14	Coal cellar floor
TWG00	73	Layer	TR 3	N/A	4	N/A	19th C	14	Concrete floor
TWG00	74	Layer	TR 3	N/A	4	N/A	17th-18th C	11	Bedding for tile layer [77]
TWG00	75	Masonry	TR 3	21	4	N/A	17th-18th C	11	Stone floor
TWG00	76	Masonry	TR 3	N/A	4	N/A	17th-18th C	11	N-S brick wall
TWG00	77	Layer	TR 3	N/A	4	N/A	17th-18th C	11	Possible tile floor
TWG00	78	Layer	TR 3	21	N/A	N/A	17th-18th C	11	Made ground
TWG00	79	Layer	TR 3	21, 22, 23	5	1	17th-18th C	11	Alluvial deposit

TWG00	80	Fill	TR 3	22	4	N/A	17th-18th C	11	Foundation cut [81] backfill	
TWG00	81	Cut	TR 3	22	4	N/A	17th-18th C	11	Foundation cut	
TWG00	82	Masonry	TR 3	23	5	N/A	17th-18th C	11	Stone paving	
TWG00	83	Cut	TR 3	21, 23	N/A	N/A	17th-18th C	11	Large irregular cut	
TWG00	84	Masonry	TR 3	21	3a	N/A	19th C	14	N-S brick wall	
TWG00	85	Layer	TR 3	24	5	2	17th-18th C	11	Domestic waste dump	
TWG00	86	Layer	TR 3	24	5	N/A	LIA	6	Reworked alluvium	
TWG00	87	Layer	TR 3	25	5	3	Neolithic	2	Reworked natural sand	
TWG00	88	Layer	TR 3	N/A	5	N/A	Natural	1	Natural sand	
TWG00	89	Layer	TR 4	N/A	6	N/A	19th C	14	Concrete floor	
TWG00	90	Masonry	TR 4	N/A	6	N/A	19th C	14	Brick supporting pier	
TWG00	91	Fill	TR 4	N/A	6	N/A	19th C	14	Construction cut [92] backfill	
TWG00	92	Cut	TR 4	N/A	6	N/A	19th C	14	Construction cut for [90]	
TWG00	93	Fill	TR 4	N/A	6	N/A	19th C	14	Construction cut [94] backfill	
TWG00	94	Cut	TR 4	N/A	6	N/A	19th C	14	Construction cut	
TWG00	95	Layer	TR 4	N/A	6	N/A	19th C	14	Bedding for floor [89]	
TWG00	96	Layer	TR 4	N/A	6	N/A	18th-19th C	13	Garden soil	
TWG00	97	Layer	TR 4	N/A	6	N/A	17th-18th C	11	Layer below [96]	
TWG00	98	Layer	TR 4	N/A	6	N/A	17th-18th C	11	Mixed deposit below [97]	
TWG00	99	Layer	TR 4	N/A	7	N/A	LIA	6	Reworked alluvium	
TWG00	100	Layer	TR 4	26, 27, 28	7	N/A	Neolithic	2	Reworked natural sand	
TWG00	101	Fill	TR 4	26	7	N/A	Neolithic	2	Fill of pit [102]	
TWG00	102	Cut	TR 4	27	7	N/A	Neolithic	2	Sub-circular pit	
TWG00	103	Layer	TR 4	N/A	7	N/A	Natural	1	Natural sand	
TWG00	104 - 199: Not Used									
TWG00	200	Layer	TP5	N/A	1	N/A	16th-17th C	10	made ground	
TWG00	201	Layer	TP5	N/A	1	N/A	Natural	1	truncated top of natural sand island	
TWG00	202	Layer	TP5	N/A	1	N/A	Natural	1	natural sand	
TWG00	203	Layer	TP5	N/A	1	N/A	Natural	1	natural sand	
TWG00	204	Layer	TP5	N/A	1	N/A	Natural	1	natural sand	
TWG00	205	Layer	TP5	N/A	1	N/A	Natural	1	natural gravel	
TWG00	206	Fill	TP3	N/A	SS	N/A	16th-17th C	10	group fill of postholes	
TWG00	207	Cut	TP3	N/A	SS	N/A	16th-17th C	10	cut of postholes	

TWG00	208	Layer	TP1	N/A	SS	N/A	16th-17th C	10		postmed/med levelling
TWG00	209	Layer	TP1	N/A	SS	N/A	L prehist - post-med	6-9		silty clay flood/ marsh deposit
TWG00	210	Layer	TP1	N/A	SS	N/A	Natural	1		top of natural sand island
TWG00	211	Layer	TP1	N/A	SS	N/A	Natural	1		natural sand
TWG00	212	Layer	TP1	N/A	SS	N/A	Natural	1		natural gravel
TWG00	213	Layer	TP2	N/A	SS	N/A	16th-17th C	10		postmed/med levelling
TWG00	214	Layer	TP2	N/A	SS	N/A	15th-16th C	9		silty clay flood/ marsh deposit
TWG00	215	Layer	TP2	N/A	SS	N/A	L prehist - post-med	6-9		silty clay flood/ marsh deposit
TWG00	216	Layer	TP2	N/A	SS	N/A	Natural	1		top of natural sand island
TWG00	217	Layer	TP2	N/A	SS	N/A	Natural	1		natural silty clay and sand laminated
TWG00	218	Layer	TP2	N/A	SS	N/A	Natural	1		natural gravel
TWG00	219	Layer	TP6	N/A	SS	N/A	15th-16th C	9		silty clay flood/ marsh deposit
TWG00	220	Layer	TP6	N/A	SS	N/A	Natural	1		top of natural sand island
TWG00	221	Layer	TP6	N/A	SS	N/A	Natural	1		natural silty clay and sand laminated
TWG00	222	Layer	TP6	N/A	SS	N/A	Natural	1		natural silty clay and sand laminated
TWG00	223	Layer	TP4	N/A	SS	N/A	16th-17th C	10		proto peat horizon
TWG00	224	Layer	TP4 & TP7	N/A	SS	N/A	Natural	1		top of natural sand island ?
TWG00	225	Fill/Cut	TP4	N/A	SS	N/A	Neo - IA	2/4		small cut
TWG00	226	Fill/Cut	TP4	N/A	SS	N/A	Neolithic	2		fill of probable natural cut
TWG00	227	Layer	TP4 & TP7	N/A	SS	N/A	Natural	1		natural silty clay and sand laminated
TWG00	228	Layer	TP4 & TP7	N/A	SS	N/A	Natural	1		natural silty clay
TWG00	229	Fill	100/200	N/A	N/A	N/A	18th-19th C	13		fill of soakaway [230]
TWG00	230	Masonry	100/200	230	N/A	N/A	18th-19th C	13		brick soakaway
TWG00	231	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TWG00	232	Fill	105-110/220	N/A	N/A	N/A	19th C	14		fill of drain [285]
TWG00	233	Fill	100-105/195	N/A	N/A	N/A	L19th-20thC	15		fill of soakaway [234]
TWG00	234	Masonry	100-105/195	234	N/A	N/A	L19th-20thC	15		brick soakaway
TWG00	235	Cut	100-105/195	234	N/A	N/A	L19th-20thC	15		cut for brick soakaway [234]
TWG00	236	Layer	100-105/195	236	N/A	N/A	L19th-20thC	15		made ground/garden soil
TWG00	237	Masonry	100-105/195	237	N/A	N/A	L19th-20thC	15		mortar floor surface
TWG00	238	Masonry	105/200-220	238	N/A	N/A	18th-19th C	13		N-S wall
TWG00	239	structure	105/200-110/220	239	N/A	N/A	18th-19th C	13-14		18th/19th century building

TWG00	240	Masonry	110/210-220	240	N/A	N/A	18th-19th C	13	N-S wall
TWG00	241	Masonry	110/210	240	N/A	N/A	18th-19th C	13	chute or sill
TWG00	242	Masonry	110/205	242	N/A	N/A	18th-19th C	13	N-S wall
TWG00	243	Masonry	110/210	240	N/A	N/A	18th-19th C	13	N-S wall
TWG00	244	Masonry	110/210	240	N/A	N/A	18th-19th C	13	chute or sill
TWG00	245	Masonry	110/210	240	N/A	N/A	18th-19th C	13	chute or sill
TWG00	246	Layer	110/210	240	N/A	N/A	18th-19th C	13	surface
TWG00	247	Layer	110/210	N/A	N/A	N/A	18th-19th C	13	make up for [246]
TWG00	248	Layer	110/210	N/A	N/A	N/A	18th-19th C	13	construction surface for [263]
TWG00	249	Layer	100-105/220	249	N/A	N/A	18th C	12	made ground
TWG00	250	Masonry	100-105/220	239	N/A	N/A	19th C	14	E-W wall rebuild
TWG00	251	Masonry	100/200	239	N/A	N/A	19th C	14	external N-S wall
TWG00	252	Masonry	100-105/220-225	239	N/A	N/A	19th C	14	floor for industrial activity
TWG00	253	Masonry	110/220-225	239	N/A	N/A	19th C	14	floor for industrial activity
TWG00	254	Masonry	110/225	239	N/A	N/A	19th C	14	floor for industrial activity
TWG00	255	Masonry	110/220-225	239	N/A	N/A	19th C	14	external N-S wall
TWG00	256	Masonry	100/225	239	N/A	N/A	19th C	14	external N-S wall
TWG00	257	Layer	110/210	N/A	N/A	N/A	18th C	12	footing for walls [240], [242] & [243]
TWG00	258	Layer	110/210	N/A	N/A	N/A	18th C	12	construction surface for walls [240], [242] & [243]
TWG00	259	Masonry	100/220	239	N/A	N/A	18th-19th C	13	external E-W wall
TWG00	260	Masonry	105/220	239	N/A	N/A	18th-19th C	13	external E-W wall
TWG00	261	Masonry	105-110/220	239	N/A	N/A	18th-19th C	13	external E-W wall
TWG00	262	Masonry	110/210	240	N/A	N/A	18th-19th C	13	base of arch
TWG00	263	structure	110/210	240	N/A	N/A	18th-19th C	13	comprises [241], [244]-[248] & [262]
TWG00	264	Masonry	105-110/215-220	239	N/A	N/A	18th-19th C	13	original floor for industrial activity
TWG00	265	Masonry	105/215-220	239	N/A	N/A	18th-19th C	13	original floor for industrial activity
TWG00	266	Masonry	105/220	239	N/A	N/A	18th-19th C	13	original floor for industrial activity
TWG00	267	Masonry	100-105/215	239	N/A	N/A	18th-19th C	13	external E-W wall
TWG00	268	Masonry	100-105/215	239	N/A	N/A	18th-19th C	13	external cobbled surface
TWG00	269	Masonry	105/220	239	N/A	N/A	19th C	14	drain cover
TWG00	270	Masonry	100-105/215	239	N/A	N/A	18th-19th C	13	external E-W wall
TWG00	271	Masonry	100/215-220	239	N/A	N/A	18th-19th C	13	external N-S wall
TWG00	272	Fill	105/220	N/A	N/A	N/A	19th C	14	fill of construction cut [273]

TWG00	273	Cut	105/220	273	N/A	N/A	19th C	14	construction cut
TWG00	274	Fill	105/220	N/A	N/A	N/A	19th C	14	fill of construction cut [273]
TWG00	275	Masonry	100-105/200	275	N/A	N/A	L19th-20thC	15	E-W garden? wall
TWG00	276	Fill	105/220	N/A	N/A	N/A	19th C	14	fill of construction cut [273]
TWG00	277	Fill	105/220	N/A	N/A	N/A	18th-19th C	13	fill of construction cut [278]
TWG00	278	Cut	105/220	278	N/A	N/A	18th-19th C	13	construction cut
TWG00	279	Fill	105/220	N/A	N/A	N/A	18th-19th C	13	fill of construction cut [278]
TWG00	280	Fill	100/220	N/A	N/A	N/A	18th-19th C	13	fill of construction cut [282]
TWG00	281	Fill	100/220	N/A	N/A	N/A	18th-19th C	13	fill of construction cut [282]
TWG00	282	Cut	100/220	282	N/A	N/A	18th-19th C	13	construction cut
TWG00	283	Fill	105/215-220	N/A	N/A	N/A	18th C	12	clay lining of tanning pit [284]
TWG00	284	Cut	105/215-220	284	N/A	N/A	18th C	12	tanning or tawing pit
TWG00	285	Masonry	105-110/220	239	N/A	N/A	19th C	14	E-W drain
TWG00	286	structure	105/220-225	239	N/A	N/A	19th C	14	industrial settings in floor [252]
TWG00	287	Fill	100-105/200	N/A	N/A	N/A	L19th-20thC	15	fill of construction cut [288]
TWG00	288	Cut	100-105/200	288	N/A	N/A	L19th-20thC	15	construction cut
TWG00	289	Masonry	95/205	N/A	N/A	N/A	L19th-20thC	15	modern culvert
TWG00	290	Cut	95/205	N/A	N/A	N/A	L19th-20thC	15	cut for [289]
TWG00	291	Fill	105/220-225	N/A	N/A	N/A	19th C	14	fill of construction cut [292]
TWG00	292	Cut	105/220-225	239	N/A	N/A	19th C	14	construction cut
TWG00	293	Layer	100-105/220-225	293	N/A	N/A	19th C	14	cement bedding layer for floor [252]
TWG00	294	Layer	95/205-220	pre-x	N/A	N/A	L19th-20thC	15	dump, make up layer
TWG00	295	Layer	100-105/215	295	N/A	N/A	18th C	12	dump, make up layer
TWG00	296	Masonry	105/215	296	N/A	N/A	18th-19th C	13	pillar? Base
TWG00	297	Layer	105-110/215-220	297	N/A	N/A	18th C	12	dump, make up layer
TWG00	298	Layer	TP7	N/A	SS	N/A	16th-17th C	10	made ground
TWG00	299	Layer	105-110/220	299	N/A	N/A	19th C	14	industrial waste
TWG00	300	Fill	100/215	N/A	N/A	N/A	18th C	12	fill of pit [301]
TWG00	301	Cut	100/215	301	N/A	N/A	18th C	12	pit cut
TWG00	302	Layer	105-110/220-225	302	N/A	N/A	19th C	14	levelling make up layer
TWG00	303	Masonry	110/225	303	N/A	N/A	19th C	14	partition wall
TWG00	304	Masonry	110/225	304	N/A	N/A	19th C	14	floor for industrial activity
TWG00	305	Masonry	110/220	304	N/A	N/A	19th C	14	floor for industrial activity

TWG00	306	Fill	105/215	N/A	N/A	N/A	18th C	12		fill of pit [307]
TWG00	307	Cut	105/215	307	N/A	N/A	18th C	12		pit cut
TWG00	308	Fill	100-105/215	N/A	N/A	N/A	18th C	12		fill of pit [310]
TWG00	309	Fill	100-105/215	N/A	N/A	N/A	18th C	12		fill of pit [310]
TWG00	310	Cut	100-105/215	310	N/A	N/A	18th C	12		pit cut
TWG00	311	Fill	105/215-220	N/A	N/A	3	18th C	12		fill of tanning pit [284]
TWG00	312	Fill	100/205	pre-x	N/A	N/A	18th C	12		fill of tanning pit [314]
TWG00	313	Timber	100/205	314	N/A	N/A	18th C	12		timber lining of tanning pit [314]
TWG00	314	Cut	100/205	314	N/A	N/A	18th C	12		tanning pit
TWG00	315	Void	N/A	N/A	N/A	N/A	18th C	N/A	N/A	N/A
TWG00	316	Timber	105/220	N/A	N/A	N/A	18th C	12		timber lining of tanning pit [284]
TWG00	317	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TWG00	318	Fill	95-100/200-205	N/A	N/A	N/A	18th C	12		fill of large pit cut [319]
TWG00	319	Cut	95-100/200-205	319	N/A	N/A	18th C	12		large pit cut
TWG00	320	Fill	100/205	N/A	N/A	N/A	18th C	12		fill of tanning pit [322]
TWG00	321	Timber	100/205	314	N/A	N/A	18th C	12		timber lining of tanning pit [322]
TWG00	322	Cut	100/205	314	N/A	N/A	18th C	12		tanning pit
TWG00	323	Cut	100-105/215-220	323	N/A	N/A	18th C	12		tanning pit
TWG00	324	Fill	100-105/215-220	N/A	N/A	N/A	18th C	12		fill of tanning pit [323]
TWG00	325	Fill	100-105/215-220	N/A	N/A	N/A	18th C	12		primary fill of tanning pit [323]
TWG00	326	Timber	100-105/215-220	N/A	N/A	N/A	18th C	12		timber lining of tanning pit [323]
TWG00	327	Fill	100/205	N/A	N/A	1	18th C	12		primary fill of tanning pit [314]
TWG00	328	Fill	105/225	N/A	N/A	N/A	18th C	12		upper fill of clay tobacco pipe waste pit [329]
TWG00	329	Cut	105/225	329	N/A	N/A	18th C	12		clay tobacco pipe waste pit
TWG00	330	Fill	110/220	N/A	N/A	N/A	17th-18th C	11		fill of posthole [331]
TWG00	331	Cut	110/220	331	N/A	N/A	17th-18th C	11		posthole
TWG00	332	Fill	95-100/205	N/A	6	N/A	18th C	12		clay lining into which tanning pits were set
TWG00	333	Cut	95-100/205	pre-x	6	N/A	18th C	12		cut for clay lining into which tanning pits were set
TWG00	334	Timber	100-105/215-220	334	N/A	N/A	18th C	12		base of barrel in [323]
TWG00	335	Layer	105/220	N/A	N/A	N/A	19th C	14		foundation rubble for [293]
TWG00	336	Cut	105/220	336	N/A	N/A	19th C	14		cut for foundation rubble
TWG00	337	Layer	105-110/220	337	6,8	N/A	17th-18th C	11		made ground levelling
TWG00	338	Fill	105/200	N/A	N/A	N/A	18th-19th C	13		burnt fill of [339]

TWG00	339	Cut	105/200	339	N/A	N/A	18th-19th C	13		pit cut
TWG00	340	Fill	105/225	N/A	N/A	4	18th C	12		clay tobacco pipe primary fill of [329]
TWG00	341	Layer	TP8	N/A	SS	N/A	16th-17th C	10		made ground
TWG00	342	Layer	TP8	N/A	SS	N/A	15th-16th C	9		proto peat probably buried soil horizon
TWG00	343	Layer	TP8	N/A	SS	N/A	Natural	1		natural sand
TWG00	344	Layer	TP8	N/A	SS	N/A	Natural	1		top of natural sand island
TWG00	345	Layer	TP8	N/A	SS	N/A	Natural	1		sandy clay natural
TWG00	346	Layer	TP8	N/A	SS	N/A	Natural	1		natural silty clay and sand laminated
TWG00	347	Layer	TP9	N/A	SS	N/A	LIA	6		natural silty clay flood deposit
TWG00	348	Layer	TP9	N/A	SS	N/A	LIA	6		natural silty clay flood deposit
TWG00	349	Layer	TP9	N/A	SS	N/A	LIA	6		natural sandy silty clay deposit
TWG00	350	Layer	TP9	N/A	SS	N/A	IA	5		proto peat probably buried soil horizon
TWG00	351	Layer	TP9	N/A	SS	N/A	Natural	1		natural sandy silt
TWG00	352	Fill	105-110/210	N/A	N/A	N/A	L19th-20thC	15		modern rubble, fill of [353]
TWG00	353	Cut	105-110/210	353	N/A	N/A	L19th-20thC	15		modern cut
TWG00	354	Fill	100/200	N/A	N/A	N/A	L19th-20thC	15		fill of modern drain cut [355]
TWG00	355	Cut	100/200	355	N/A	N/A	L19th-20thC	15		modern drain cut
TWG00	356	Fill	100/200	N/A	N/A	5	18th C	12		fill of tanning pit [358]
TWG00	357	Timber	100/200	373	N/A	N/A	18th C	12		timber lining of tanning pit [358]
TWG00	358	Cut	100/200	373	N/A	N/A	18th C	12		tanning pit
TWG00	359	Fill	100/220	N/A	N/A	N/A	18th C	12		fill of pit [360]
TWG00	360	Cut	100/220	360	N/A	N/A	18th C	12		pit cut
TWG00	361	Fill	100/200	N/A	N/A	2	17th-18th C	11		fill of pit [390]
TWG00	362	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TWG00	363	Layer	105-110/205-210	363	6	N/A	16th-17th C	10		clinker layer
TWG00	364	Fill	110/215	N/A	N/A	N/A	18th C	12		fill of pit [365]
TWG00	365	Cut	110/215	365	N/A	N/A	18th C	12		pit cut
TWG00	366	Void	N/A	N/A	N/A	N/A	18th C	N/A	N/A	N/A
TWG00	367	Fill	100/220	N/A	N/A	N/A	18th C	12		fill of pit [368]
TWG00	368	Cut	100/220	368	N/A	N/A	18th C	12		pit cut
TWG00	369	Fill	100-105/220	N/A	N/A	N/A	18th C	12		fill of pit [377]
TWG00	370	Layer	100-105/220	370	6	N/A	17th-18th C	11		made ground
TWG00	371	Fill	100/200	N/A	N/A	6	18th C	12		fill of tanning pit [373]

TWG00	372	Timber	100/200	373	N/A	N/A	18th C	12	timber lining of tanning pit [373]
TWG00	373	Cut	100/200	373	N/A	N/A	18th C	12	tanning pit
TWG00	374	Fill	100/200	N/A	N/A	7	18th C	12	cessy fill of [376]
TWG00	375	Timber	100/200	375	N/A	N/A	18th C	12	wattle frame within [376]
TWG00	376	Cut	100/200	376	N/A	N/A	18th C	12	cut for latrine?
TWG00	377	Cut	100-105/215-220	377	N/A	N/A	18th C	12	irregular pit cut
TWG00	378	Masonry	100/200	376	N/A	N/A	18th C	12	part of [376]
TWG00	379	Fill	100/200	N/A	N/A	N/A	18th C	12	fill of tanning pit [381]
TWG00	380	Timber	100/200	373	N/A	N/A	18th C	12	timber lining of tanning pit [381]
TWG00	381	Cut	100/200	373	N/A	N/A	18th C	12	tanning pit
TWG00	382	Fill	100/200	N/A	N/A	N/A	18th C	12	fill of tanning pit [384]
TWG00	383	Timber	100/200	373	N/A	N/A	18th C	12	timber lining of tanning pit [384]
TWG00	384	Cut	100/200	373	N/A	N/A	18th C	12	tanning pit
TWG00	385	Masonry	105/205	385	N/A	N/A	17th-18th C	11	yard surface/floor
TWG00	386	Cut	105-110/205	386	6	N/A	17th-18th C	11	possibly timber lined cut
TWG00	387	Layer	105-110/205	N/A	6	N/A	17th-18th C	11	mortar surface
TWG00	388	Fill	105-110/205	N/A	6	15	17th-18th C	11	fill of [386]
TWG00	389	Fill	105/210	390	N/A	N/A	17th-18th C	11	clay lining to [390]
TWG00	390	Cut	105/210	390	N/A	N/A	17th-18th C	11	pit cut
TWG00	391	Fill	105/215	N/A	N/A	N/A	17th-18th C	11	fill of [392]
TWG00	392	Cut	105/215	392	N/A	N/A	17th-18th C	11	pit cut
TWG00	393	Fill	105/210	N/A	N/A	N/A	17th-18th C	11	fill of [394]
TWG00	394	Cut	105/210	394	N/A	N/A	17th-18th C	11	pit cut
TWG00	395	Fill	105/210	N/A	N/A	N/A	17th-18th C	11	fill of [396]
TWG00	396	Cut	105/210	396	N/A	N/A	17th-18th C	11	pit cut
TWG00	397	Fill	100-105/210	N/A	N/A	N/A	17th-18th C	11	fill of [398]
TWG00	398	Cut	100-105/210	398	N/A	N/A	17th-18th C	11	pit cut
TWG00	399	Layer/Fill	100/215	N/A	5	N/A	16th-17th C	10	recorded as [456] to south, an ashy dump over ditch [400]
TWG00	400	Cut	100/215	400	7,9	N/A	15th-16th C	9	extensive N-S ditch cut recorded as [486] and [468] to south
TWG00	401	Fill/Cut	105/210	401	N/A	N/A	L19th-20thC	15	modern intrusion
TWG00	402	Cut	105/215	402	N/A	N/A	16th-17th C	10	pit cut
TWG00	403	Masonry	100/205	403	N/A	N/A	L19th-20thC	15	semi-circle of bricks

TWG00	404	Fill	105/215	N/A	N/A	N/A	17th-18th C	11	fill of [405]
TWG00	405	Cut	105/215	405	N/A	N/A	17th-18th C	11	pit cut
TWG00	406	Fill	105/215	N/A	N/A	N/A	16th-17th C	10	fill of [402]
TWG00	407	Fill	100-105/210-215	N/A	N/A	N/A	17th-18th C	11	fill of [408]
TWG00	408	Cut	100-105/210-215	408	N/A	N/A	17th-18th C	11	pit cut
TWG00	409	Masonry	105/210	409	N/A	N/A	17th-18th C	11	yard surface/floor
TWG00	410	Masonry	105/210	410	N/A	N/A	17th-18th C	11	wall
TWG00	411	Fill	105/210	N/A	N/A	N/A	17th-18th C	11	fill of [412]
TWG00	412	Cut	105/210	412	N/A	N/A	17th-18th C	11	pit cut
TWG00	413	Layer	105/210	413	N/A	N/A	17th-18th C	11	rubble layer
TWG00	414	Fill	105/210	N/A	N/A	N/A	17th-18th C	11	fill of construction cut [415]
TWG00	415	Cut	105/210	415	N/A	N/A	17th-18th C	11	construction cut for [410]
TWG00	416	Fill	100-105/210	N/A	N/A	N/A	17th-18th C	11	Fill of [417]
TWG00	417	Cut	100-105/210	417	N/A	N/A	17th-18th C	11	linear drainage cut
TWG00	418	Layer	TP10	N/A	2	N/A	Natural	1	truncated top of natural sand island
TWG00	419	Layer	TP10	N/A	2	N/A	Natural	1	clay silt sand natural
TWG00	420	Layer	TP10	N/A	2	N/A	Natural	1	silt sand natural
TWG00	421	Layer	TP10	N/A	2	N/A	Natural	1	sand natural
TWG00	422	Layer	TP10	N/A	2	N/A	Natural	1	sand natural
TWG00	423	Layer	TP10	N/A	2	N/A	Natural	1	silt sand natural
TWG00	424	Layer	TP10	N/A	2	N/A	Natural	1	clay silt natural
TWG00	425	Layer	105-110/210	425	9	N/A	16th-17th C	10	levelling make up
TWG00	426	Fill	105/210-215	N/A	N/A	N/A	17th-18th C	11	fill of [427]
TWG00	427	Cut	105/210-215	427	N/A	N/A	17th-18th C	11	pit cut
TWG00	428	Fill	105/210	N/A	N/A	N/A	17th-18th C	11	fill of [429]
TWG00	429	Cut	105/210	429	N/A	N/A	17th-18th C	11	pit cut
TWG00	430	Layer	100/210	N/A	N/A	N/A	16th-17th C	10	industrial waste
TWG00	431	Fill	105/205-210	431	N/A	N/A	17th-18th C	11	clay lining to [396],[398] & [429]
TWG00	432	Fill	105/225	N/A	N/A	N/A	18th C	12	lime residue at base of cut [329]
TWG00	433	Layer	105-110/210-215	433	6	8	16th-17th C	10	clinker layer
TWG00	434	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TWG00	435	Fill	100/205	N/A	N/A	N/A	18th C	12	fill of tanning pit [437]
TWG00	436	Timber	100/205	314	N/A	N/A	18th C	12	timber lining of tanning pit [437]

TWG00	437	Cut	100/205	314	N/A	N/A	18th C	12	tanning pit
TWG00	438	Fill	105/210	N/A	N/A	N/A	16th-17th C	10	fill of [439]
TWG00	439	Cut	105/210	439	N/A	N/A	16th-17th C	10	pit cut
TWG00	440	Layer	100/215	440	N/A	N/A	16th-17th C	10	dump make up levelling
TWG00	441	Layer	100/215-220	441	N/A	N/A	16th-17th C	10	dump make up levelling
TWG00	442	Fill	105/210	N/A	N/A	N/A	16th-17th C	10	fill of [443]
TWG00	443	Cut	105/210	443	N/A	N/A	16th-17th C	10	pit cut
TWG00	444	Fill	105-110/215-220	N/A	N/A	N/A	17th-18th C	11	backfill of timber drain [445]
TWG00	445	Timber	105-110/215-220	445	N/A	N/A	17th-18th C	11	timber drain
TWG00	446	Cut	105-110/215-220	446	N/A	N/A	17th-18th C	11	cut for timber drain [445]
TWG00	447	Cut	105/205-210	447	N/A	N/A	17th-18th C	11	cut for clay lining to [396],[398] & [429]
TWG00	448	Cut	105/215	448	N/A	N/A	16th-17th C	10	shallow depression
TWG00	449	Fill	105/215	N/A	N/A	N/A	16th-17th C	10	fill of [448]
TWG00	450	Timber	100/220	450	N/A	N/A	17th-18th C	11	timber drain in [460]
TWG00	451	Timber	100/220	451	N/A	N/A	17th-18th C	11	part of [450]
TWG00	452	Masonry	100/210	452	N/A	N/A	L19th-20thC	15	course of bricks assoc. with [403]
TWG00	453	Layer	105/220	453	N/A	N/A	17th-18th C	11	levelling make up
TWG00	454	Fill	105-110/215	N/A	N/A	N/A	15th-16th C	9	fill of drain [455]
TWG00	455	Cut	105-110/215	455	N/A	N/A	15th-16th C	9	drainage slot
TWG00	456	Fill	100/200	N/A	7	N/A	16th-17th C	10	fill of [400]
TWG00	457	Fill	100-110/220	N/A	N/A	N/A	16th-17th C	10	fill of drainage ditch [458]
TWG00	458	Cut	100-110/220	458	6	N/A	15th-16th C	9	drainage ditch
TWG00	459	Fill	100/220	N/A	N/A	N/A	17th-18th C	11	backfill of drain cut [460]
TWG00	460	Cut	100/220	460	N/A	N/A	17th-18th C	11	cut for timber drain [450]
TWG00	461	Layer	105/210	461	N/A	N/A	16th-17th C	10	clay bedding overlain by clinker layer [430]/[433]
TWG00	462	Layer	105-110/215-220	462	6	11	16th-17th C	10	dump make up levelling
TWG00	463	Fill	105/220	N/A	6	9	15th-16th C	9	fill of [458]
TWG00	464	Fill	105-110/210	N/A	6	10	15th-16th C	9	fill of [465]
TWG00	465	Cut	105-110/210	465	6	N/A	15th-16th C	9	drainage slot
TWG00	466	Layer	105-110/210	466	6	N/A	15th-16th C	9	reworked alluvium
TWG00	467	Fill	100/200-205	N/A	N/A	N/A	L19th-20thC	15	fill of linear ditch cut [468]
TWG00	468	Cut	100/200-205	468	3	N/A	15th-16th C	9	drainage ditch = [486] & [400]
TWG00	469	Fill	105/210	N/A	N/A	N/A	17th-18th C	11	fill of cut [470]

TWG00	470	Cut	105/210	470	N/A	N/A	17th-18th C	11	pit cut
TWG00	471	Fill	105-110/215	N/A	6	N/A	15th-16th C	9	fill of [472]
TWG00	472	Cut	105-110/215	472	6	N/A	15th-16th C	9	timber lined drainage ditch
TWG00	473	Fill	105/210	N/A	N/A	N/A	17th-18th C	11	fill of pit [470]
TWG00	474	Timber	105-110/215	472	N/A	N/A	15th-16th C	9	post in [472]
TWG00	475	Timber	105-110/215	472	N/A	N/A	15th-16th C	9	post in [472]
TWG00	476	Timber	105-110/215	472	N/A	N/A	15th-16th C	9	post in [472]
TWG00	477	Timber	105-110/215	472	N/A	N/A	15th-16th C	9	plank in [472]
TWG00	478	Fill	100/215-220	N/A	5	13	15th-16th C	9	fill of [400]
TWG00	479	structure	105-110/215	N/A	N/A	N/A	15th-16th C	9	timber structure within [472]
TWG00	480	Layer	105/210	480	N/A	N/A	17th-18th C	11	bedding layer for floor [409]
TWG00	481	Cut	105/210	N/A	N/A	N/A	17th-18th C	11	Construction cut for [409]
TWG00	482	Timber	100-105/200	483	N/A	N/A	18th C	12	timber lining of tanning pit [483]
TWG00	483	Cut	100-105/200	483	N/A	N/A	18th C	12	tanning pit
TWG00	484	Layer	100/200	484	N/A	N/A	17th-18th C	11	reworked alluvial clay
TWG00	485	Fill	100/200	N/A	N/A	12	16th-17th C	10	fill of [486]
TWG00	486	Cut	100/200	486	N/A	N/A	15th-16th C	9	drainage ditch = [468] & [400]
TWG00	487	Fill/Layer	100/200	N/A	N/A	N/A	18th C	12	part of [376]
TWG00	488	Fill	100-105/200	N/A	N/A	N/A	L19th-20thC	15	modern backfill
TWG00	489	Fill	100-105/200	N/A	N/A	N/A	L19th-20thC	15	modern backfill
TWG00	490	Fill	100-105/200	N/A	N/A	N/A	L19th-20thC	15	modern backfill
TWG00	491	Fill	100/200	N/A	N/A	N/A	18th C	12	fill of tanning pit[482]
TWG00	492	Layer	95-110/200-225	486	3,6,7,8	22	LIA	6	alluvial deposit
TWG00	493	Fill	105/210-110/215	N/A	N/A	N/A	15th-16th C	9	fill of posthole [494]
TWG00	494	Cut	105/210-110/215	500	N/A	N/A	15th-16th C	9	cut of posthole
TWG00	495	Fill	110/210	N/A	N/A	N/A	15th-16th C	9	fill of posthole [496]
TWG00	496	Cut	110/210	500	N/A	N/A	15th-16th C	9	cut of posthole
TWG00	497	Fill	105/210	N/A	N/A	N/A	15th-16th C	9	fill of posthole [498]
TWG00	498	Cut	105/210	500	N/A	N/A	15th-16th C	9	cut of posthole
TWG00	499	Fill	110/210	N/A	6	N/A	16th-17th C	10	fill of ditch [500]
TWG00	500	Cut	110/210	500	6	N/A	15th-16th C	9	E-W ditch
TWG00	501	Layer	100/200	N/A	N/A	N/A	17th-18th C	11	mixed layer cut by tanning pits
TWG00	502	Fill	100/200	N/A	3	N/A	18th C	12	clay lining for tanning pits

TWG00	503	Cut	100/200	503	N/A	N/A	18th C	12	cut for clay lining [502]
TWG00	504	Fill	100/200	N/A	N/A	N/A	18th C	12	clay lining for tanning pit [483]
TWG00	505	Cut	100/200	503,483	N/A	N/A	18th C	12	cut for clay lining [504]
TWG00	506	Fill	105/215	N/A	6	N/A	15th-16th C	9	fill of [507]
TWG00	507	Cut	105/215	507	6	N/A	15th-16th C	9	pit cut
TWG00	508	Fill	105-110/215-220	N/A	6	N/A	16th-17th C	10	fill of [509]
TWG00	509	Cut	105-110/215-220	509	6	N/A	15th-16th C	9	pit cut
TWG00	510	Fill	100/200	N/A	N/A	N/A	18th C	12	fill of [511]
TWG00	511	Cut	100/200	511	N/A	N/A	18th C	12	pit cut
TWG00	512	Fill	105-110/215	N/A	6	N/A	16th-17th C	10	fill of [513]
TWG00	513	Cut	105-110/215	513	6	N/A	15th-16th C	9	E-W linear drainage slot
TWG00	514	Layer	100/205	400	4	N/A	16th-17th C	10	levelling make up layer
TWG00	515	Fill	100/205	N/A	4	N/A	16th-17th C	10	fill of [400]
TWG00	516	Fill	100/205	N/A	4	N/A	15th-16th C	9	fill of [400]
TWG00	517	Fill	105-110/220	N/A	6	N/A	15th-16th C	9	fill of [458]
TWG00	518	Fill	105/220	N/A	N/A	N/A	16th-17th C	10	fill of [519]
TWG00	519	Cut	105/220	519	N/A	N/A	15th-16th C	9	butt end of [513]
TWG00	520	Fill	110/215	N/A	6	N/A	15th-16th C	9	fill of [507]
TWG00	521	Fill	105/215	N/A	N/A	N/A	15th-16th C	9	fill of [522]
TWG00	522	Cut	105/215	522	N/A	N/A	15th-16th C	9	butt end of [472]
TWG00	523	Masonry	100/200	pre-x	N/A	N/A	18th C	12	part of latrine (re-used tanning pit [511])
TWG00	524	Fill	100/215	N/A	N/A	N/A	15th-16th C	9	fill of [526]
TWG00	525	Fill	100/215	N/A	N/A	N/A	15th-16th C	9	primary fill of [526]
TWG00	526	Cut	100/215	526	N/A	N/A	15th-16th C	9	E-W linear drainage slot
TWG00	527	Fill	100/220	N/A	N/A	N/A	17th-18th C	11	fill of timber drain [450]
TWG00	528	Layer	100/215-220	N/A	5	N/A	16th-17th C	10	dump levelling layer
TWG00	529	Layer	100/215-220	529	5	N/A	15th-16th C	9	reworked upper level of alluvium
TWG00	530	Layer	100/210-215	N/A	N/A	N/A	15th-16th C	9	reworked upper level of alluvium
TWG00	531	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TWG00	532	Fill	100/215-220	N/A	5	N/A	15th-16th C	9	primary fill of [400]
TWG00	533	Layer	100/215-220	533	5	N/A	15th-16th C	9	reworked upper level of alluvium
TWG00	534	Layer	105/205	534	N/A	N/A	15th-16th C	9	dump levelling layer
TWG00	535	Cut	100-105/205-210	535	9	N/A	15th-16th C	9	E-W linear drainage slot

TWG00	536	Fill	100-105/205-210	N/A	9	N/A	15th-16th C	9		fill of E-W linear drainage slot [535]
TWG00	537	Cut	105/205	537	N/A	N/A	15th-16th C	9		pit cut
TWG00	538	Fill	105/205	N/A	N/A	N/A	15th-16th C	9		fill of [537]
TWG00	539	Fill	110/210	N/A	N/A	N/A	15th-16th C	9		fill of posthole [540]
TWG00	540	Cut	110/210	540	N/A	N/A	15th-16th C	9		posthole
TWG00	541	Fill	110/210	N/A	N/A	N/A	15th-16th C	9		fill of posthole [542]
TWG00	542	Cut	110/210	540	N/A	N/A	15th-16th C	9		posthole
TWG00	543	Fill	110/210	N/A	N/A	N/A	15th-16th C	9		fill of posthole [544]
TWG00	544	Cut	110/210	540	N/A	N/A	15th-16th C	9		posthole
TWG00	545	Fill	115/210	N/A	6	N/A	15th-16th C	9		fill of posthole [546]
TWG00	546	Cut	115/210	540	6	N/A	15th-16th C	9		posthole
TWG00	547	Fill	100/215	N/A	7	N/A	15th-16th C	9		primary fill of [400]
TWG00	548	Fill	100/215	N/A	7	N/A	15th-16th C	9		fill of [400]
TWG00	549	Layer	100/215	N/A	7	N/A	Natural	1		top of prehistoric sand horizon
TWG00	550	Layer	100/215	N/A	7	N/A	15th-16th C	9		dump levelling layer
TWG00	551	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TWG00	552	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TWG00	553	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TWG00	554	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TWG00	555	Cut	105/220	555	N/A	N/A	15th-16th C	9		E-W linear drainage slot
TWG00	556	Fill	105/220	N/A	N/A	14	15th-16th C	9		fill of [555]
TWG00	557	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TWG00	558	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TWG00	559	Layer	105-110/215-220	559	6	N/A	15th-16th C	9		reworked alluvium
TWG00	560	Fill	100/210	N/A	9	N/A	15th-16th C	9		fill of ditch [400]
TWG00	561	Fill	100/210	N/A	9	N/A	15th-16th C	9		fill of ditch [400]
TWG00	562	Fill	100/210	N/A	9	N/A	15th-16th C	9		fill of ditch [400]
TWG00	563	Fill	100/210	N/A	9	N/A	15th-16th C	9		primary fill of ditch [400]
TWG00	564	Masonry	105/205	564	N/A	N/A	L19th-20thC	15		pillar
TWG00	565	Layer	105/205-210	565	N/A	N/A	16th-17th C	10		rubble layer
TWG00	566	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TWG00	567	Fill	105/205	N/A	N/A	N/A	L19th-20thC	15		fill of [568]
TWG00	568	Cut	105/205	568	N/A	N/A	L19th-20thC	15		cut for pillar

TWG00	569	Layer	105/205	569	N/A	N/A	16th-17th C	10	rubble layer
TWG00	570	Layer	105/205	570	N/A	N/A	16th-17th C	10	dump levelling layer with industrial waste
TWG00	571	Fill	105/205	N/A	N/A	N/A	15th-16th C	9	fill of [572]
TWG00	572	Cut	105/205	572	N/A	N/A	15th-16th C	9	pit cut
TWG00	573	Fill	105/205-210	N/A	N/A	N/A	15th-16th C	9	fill of [574]
TWG00	574	Cut	105/205-210	574	N/A	N/A	15th-16th C	9	pit cut
TWG00	575	Fill	105/205	N/A	6	N/A	15th-16th C	9	upper fill of E-W linear drainage slot [576]
TWG00	576	Cut	105/205-210	576	6	N/A	15th-16th C	9	E-W linear drainage slot
TWG00	577	Fill	105-110/210	N/A	N/A	N/A	15th-16th C	9	fill of [578]
TWG00	578	Cut	105-110/210	578	N/A	N/A	15th-16th C	9	E-W linear drainage slot
TWG00	579	Layer	105-110/205	579	6	N/A	15th-16th C	9	reworked alluvium
TWG00	580	Fill	105/205	N/A	6	N/A	15th-16th C	9	fill of E-W linear drainage slot [576]
TWG00	581	Fill	105/205	N/A	6	N/A	15th-16th C	9	primary fill of drainage slot [576]
TWG00	582	Masonry	105-110/205	582	N/A	N/A	18th-19th C	13	internal wall between [238] & [242]
TWG00	583	Fill	100/200-205	N/A	N/A	N/A	15th-16th C	9	Fill of ditch [400]
TWG00	584	Layer	100-110/200-220	584	6	22	Neo/BA	3	plough soil horizon
TWG00	585	Fill	105/215	N/A	N/A	16	Neo/BA	3	fill of possible well [586]
TWG00	586	Cut	105/215	586	N/A	N/A	Neo/BA	3	possible well
TWG00	587	Fill	100/205	N/A	N/A	N/A	BA/IA	4	fill of [588]
TWG00	588	Cut	100/205	588	N/A	N/A	BA/IA	4	dodgy cut, possible posthole or tree bole
TWG00	589	Fill(s)	100-110/200-215	N/A	6	19	Neo/BA	3	fill of ardmarks
TWG00	590	Cut(s)	100-110/200-215	590	6	N/A	Neo/BA	3	cut of ardmarks
TWG00	591	Fill(s)	100/210	N/A	N/A	N/A	BA/IA	4	fill of stake/postholes [592]
TWG00	592	Cut(s)	100/210	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	593	Fill(s)	100/200 - 105/205	N/A	N/A	N/A	BA/IA	4	fill of stake/postholes [594], [613]-[634], [652]-[670]
TWG00	594	Cut(s)	100/210	N/A	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	595	Fill	100/205	590	N/A	N/A	BA/IA	4	fill of stake/postholes [596]
TWG00	596	Cut	100/205	N/A	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	597	Fill	105/210	590	N/A	N/A	BA/IA	4	fill of stakehole [598]
TWG00	598	Cut	105/210	N/A	N/A	N/A	BA/IA	4	cut of stakehole
TWG00	599	Fill	100/205	N/A	N/A	N/A	Neolithic	2	fill of posthole [600]
TWG00	600	Cut	100/205	590	N/A	N/A	Neolithic	2	cut of posthole
TWG00	601	Fill	100/210	N/A	N/A	N/A	Neolithic	2	fill of posthole [602]

TWG00	602	Cut	100/210	590	N/A	N/A	Neolithic	2	cut of posthole
TWG00	603	Layer	100-110/200-220	603	6	21, 22	IA	5	buried soil horizon
TWG00	604	Layer	110/210	N/A	6	N/A	LIA	6	alluvial deposit
TWG00	605	Layer	110/210	N/A	6	N/A	4th-15th C	8	alluvial deposit
TWG00	606	Layer	110/210	N/A	6	N/A	4th-15th C	8	alluvial deposit
TWG00	607	Layer	110/210	N/A	6	N/A	15th-16th C	9	alluvial deposit
TWG00	608	Layer	100/200	N/A	6	N/A	LIA	6	alluvial deposit
TWG00	609	Layer	100-110/200-220	N/A	6	N/A	IA	5	buried soil horizon
TWG00	610	Layer	100-110/200-220	N/A	6	N/A	IA	5	plough soil horizon
TWG00	611	Fill	100/200	N/A	N/A	17, 18	Neolithic	2	fill of [612]
TWG00	612	Cut	100/200	612	N/A	N/A	Neolithic	2	small ovoid pit possible fire pit
TWG00	613	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	614	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	615	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	616	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	617	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	618	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	619	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	620	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	621	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	622	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	623	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	624	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	625	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	626	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	627	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	628	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	629	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	630	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	631	Cut	100/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	632	Cut	100/210	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	633	Cut	100/210	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	634	Cut	100/210	590	N/A	N/A	BA/IA	4	cut of stake/postholes

TWG00	635	Cut	100/210	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	636	Cut	100/210	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	637	Fill	105/210	N/A	N/A	N/A	BA/IA	4	fill of posthole [638]
TWG00	638	Cut	105/210	590	N/A	N/A	BA/IA	4	cut of posthole
TWG00	639	Fill(s)	105-110/220	N/A	N/A	N/A	Neolithic	2	fill of stake/postholes [640]-[648]
TWG00	640	Cut	110/220	590	N/A	N/A	Neolithic	2	cut of stake/postholes
TWG00	641	Cut	110/220	590	N/A	N/A	Neolithic	2	cut of stake/postholes
TWG00	642	Cut	110/220	590	N/A	N/A	Neolithic	2	cut of stake/postholes
TWG00	643	Cut	110/220	590	N/A	N/A	Neolithic	2	cut of stake/postholes
TWG00	644	Cut	110/220	590	N/A	N/A	Neolithic	2	cut of stake/postholes
TWG00	645	Cut	105/220	590	N/A	N/A	Neolithic	2	cut of stake/postholes
TWG00	646	Cut	105/220	590	N/A	N/A	Neolithic	2	cut of stake/postholes
TWG00	647	Cut	105/220	590	N/A	N/A	Neolithic	2	cut of stake/postholes
TWG00	648	Cut	105/220	590	N/A	N/A	Neolithic	2	cut of stake/postholes
TWG00	649	Layer	100/200 - 110/220	590	N/A	N/A	Natural	1	natural sand cut by stake/postholes and ardmarks
TWG00	650	Fill	100/215	N/A	N/A	20	Neolithic	2	fill of [651]
TWG00	651	Cut	100/215	651	N/A	N/A	Neolithic	2	ovoid pit cut
TWG00	652	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	653	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	654	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	655	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	656	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	657	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	658	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	659	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	660	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	661	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	662	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	663	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	664	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	665	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	666	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	667	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes

TWG00	668	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	669	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	670	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	671	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	672	Cut	105/205	590	N/A	N/A	BA/IA	4	cut of stake/postholes
TWG00	673	Fill/Cut	105/205	590	N/A	N/A	BA/IA	4	ephemeral stake/postholes planned not excavated
TWG00	674	Fill/Cut	100/200	590	N/A	N/A	BA/IA	4	group of stakeholes
TWG00	675 - 699: Not Used								
TWG00	700	Fill/Cut	WB	N/A	N/A	N/A	18th C	12	tanning pit
TWG00	701	Fill/Cut	WB	N/A	N/A	N/A	18th C	12	tanning pit
TWG00	702	Layer	WB	N/A	N/A	N/A	18th C	12	tanning pit
TWG00	703	Layer	WB	N/A	N/A	N/A	Neo/BA	3	buried soil horizon
TWG00	704	Layer	WB	N/A	N/A	N/A	Neo/BA	3	buried soil horizon
TWG00	705	Fill	WB	N/A	N/A	N/A	18th C	12	fill of tanning pit
TWG00	706	Layer	WB	N/A	N/A	N/A	18th C	12	cut of tanning pit
TWG00	707	Timber	WB	N/A	N/A	N/A	18th C	12	timber frame of tanning pit
TWG00	708	Timber	WB	N/A	N/A	N/A	18th C	12	post holding timber frame
TWG00	709	Timber	WB	N/A	N/A	N/A	18th C	12	post holding timber frame
TWG00	710	group	WB	N/A	N/A	N/A	18th C	12	stake holes in north south alignment
TWG00	711	Fill/Cut	WB	N/A	N/A	N/A	18th C	12	tanning pit (group)
TWG00	712	Layer	WB	N/A	N/A	N/A	Natural	1	top of natural sand island
TWG00	713	Fill	WB	N/A	N/A	N/A	Neolithic	2	fill of possible channel
TWG00	714	Cut	WB	N/A	N/A	N/A	Neo/IA	2/4	cut of possible channel
TWG00	715	Fill	WB	N/A	N/A	N/A	Neolithic	2	fill of post hole
TWG00	716	Cut	WB	N/A	N/A	N/A	Neolithic	2	fill of post hole
TWG00	717	Fill	WB	N/A	N/A	N/A	Neolithic	2	fill of post hole
TWG00	718	Cut	WB	N/A	N/A	N/A	Neolithic	2	fill of post hole
TWG00	719	Fill	WB	N/A	N/A	N/A	Neolithic	2	fill of post hole
TWG00	720	Cut	WB	N/A	N/A	N/A	Neolithic	2	fill of post hole
TWG00	721	Fill	WB	N/A	N/A	N/A	Neolithic	2	fill of post hole
TWG00	722	Cut	WB	N/A	N/A	N/A	Neolithic	2	fill of post hole
TWG00	723	Layer	WB	N/A	N/A	N/A	16th-17th C	10	make up layer
TWG00	724	Layer	WB	N/A	N/A	N/A	Natural	1	truncated alluvial sands

TWG00	725	Fill	WB	N/A	N/A	N/A	Neo/BA	3	fill of ard marks
TWG00	726	Cut	WB	N/A	N/A	N/A	Neo/BA	3	ard marks
TWG00	727 - 749: Not Used								
TBA03	750	Fill	105-110/200	820	N/A	N/A	18th-19th C	13	fill of wooden tank, Structure [820]
TBA03	751	Fill	105-110/200	820	N/A	N/A	18th-19th C	13	fill of wooden tank, Structure [820]
TBA03	752	Cut	105-110/200	820	13	N/A	18th-19th C	13	cut for wooden tank, Structure [820]
TBA03	753	Masonry		on CAD	N/A	N/A	L19th-20thC	15	n/s aligned wall
TBA03	754	Masonry		on CAD	N/A	N/A	L19th-20thC	15	e/w aligned wall
TBA03	755	Masonry		on CAD	N/A	N/A	L19th-20thC	15	wall footing
TBA03	756	Masonry		on CAD	N/A	N/A	18th-19th C	13	n/s aligned wall
TBA03	757	Masonry		on CAD	N/A	N/A	L19th-20thC	15	floor fragment
TBA03	758	Masonry		on CAD	N/A	N/A	L19th-20thC	15	n/s wall with e/w return
TBA03	759	Masonry		on CAD	N/A	N/A	L19th-20thC	15	e/w aligned wall
TBA03	760	Masonry		on CAD	N/A	N/A	L19th-20thC	15	e/w aligned wall
TBA03	761	Masonry		on CAD	N/A	N/A	L19th-20thC	15	industrial settings for wheel driven device
TBA03	762	Masonry		on CAD	N/A	N/A	L19th-20thC	15	e/w aligned wall
TBA03	763	Masonry		on CAD	N/A	N/A	L19th-20thC	15	n/s aligned wall
TBA03	764	Masonry		on CAD	N/A	N/A	L19th-20thC	15	e/w aligned wall
TBA03	765	Masonry		on CAD	N/A	N/A	L19th-20thC	15	two n/s aligned walls and two e/w aligned walls forming cellar
TBA03	766	Masonry		on CAD	N/A	N/A	L19th-20thC	15	n/s aligned wall
TBA03	767	Masonry		on CAD	N/A	N/A	L19th-20thC	15	e/w aligned wall forms cellar with [766] and [770]
TBA03	768	Masonry		on CAD	N/A	N/A	L19th-20thC	15	brick and stone floor surface
TBA03	769	Masonry		on CAD	N/A	N/A	L19th-20thC	15	e/w aligned wall continuation of [767]
TBA03	770	Masonry		on CAD	N/A	N/A	L19th-20thC	15	e/w aligned wall forms cellar with [766] and [767]/[769]
TBA03	771	Masonry		on CAD	N/A	N/A	L19th-20thC	15	brick and stone floor surface
TBA03	772	Masonry		on CAD	N/A	N/A	L19th-20thC	15	brick floor surface
TBA03	773	Masonry		on CAD	N/A	N/A	L19th-20thC	15	granite setts floor surface
TBA03	774	Masonry		on CAD	N/A	N/A	L19th-20thC	15	brick culvert
TBA03	775	Masonry		on CAD	N/A	N/A	L19th-20thC	15	brick culvert
TBA03	776	Masonry		on CAD	N/A	N/A	L19th-20thC	15	rebuild of [777]
TBA03	777	Masonry		on CAD	N/A	N/A	L19th-20thC	15	chimney
TBA03	778	Masonry		on CAD	N/A	N/A	L19th-20thC	15	tile floor surface

TBA03	779	Masonry	on CAD	N/A	N/A	L19th-20thC	15	compacted brick and rubble floor surface
TBA03	780	Masonry	on CAD	N/A	N/A	L19th-20thC	15	stone setting for industrial fitting
TBA03	781	Masonry	on CAD	N/A	N/A	L19th-20thC	15	layer of industrial waste
TBA03	782	Masonry	on CAD	N/A	N/A	L19th-20thC	15	wall on nne/ssw alignment
TBA03	783	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick rubble floor fragment
TBA03	784	Masonry	on CAD	N/A	N/A	L19th-20thC	15	e/w wall fragment
TBA03	785	Masonry	on CAD	N/A	N/A	L19th-20thC	15	n/s wall fragment
TBA03	786	Masonry	on CAD	N/A	N/A	L19th-20thC	15	n/s wall
TBA03	787	Masonry	on CAD	N/A	N/A	L19th-20thC	15	floor fragment
TBA03	788	Masonry	on CAD	N/A	N/A	L19th-20thC	15	steel setting
TBA03	789	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	790	Masonry	on CAD	N/A	N/A	L19th-20thC	15	stone floor surface
TBA03	791	Masonry	on CAD	N/A	N/A	L19th-20thC	15	e/w aligned wall
TBA03	792	Masonry	on CAD	N/A	N/A	L19th-20thC	15	partition wall
TBA03	793	Masonry	on CAD	N/A	N/A	L19th-20thC	15	fire place wall
TBA03	794	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	795	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	796	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	797	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	798	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	799	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	800	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	801	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	802	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	803	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	804	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	805	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	806	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	807	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	808	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	809	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	810	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base
TBA03	811	Masonry	on CAD	N/A	N/A	L19th-20thC	15	brick pillar base

TBA03	812	Masonry		on CAD	N/A	N/A	L19th-20thC	15		brick pillar base
TBA03	813	Masonry		on CAD	N/A	N/A	L19th-20thC	15		brick pillar base
TBA03	814	Masonry		on CAD	N/A	N/A	L19th-20thC	15		brick pillar base
TBA03	815	Layer	105/200-205	815	N/A	N/A	18th-19th C	13		floor make up layer
TBA03	816	Layer	105/200	816	N/A	N/A	18th-19th C	13		floor make up layer
TBA03	817	Layer	115/200	817	N/A	N/A	18th-19th C	13		floor make up layer
TBA03	818	Layer	105/200-205	818	N/A	N/A	18th-19th C	13		floor make up layer
TBA03	819	Layer	105/200-205	819	N/A	N/A	18th-19th C	13		floor make up layer
TBA03	820	structure	105-110/200	820	1,2,3	N/A	18th-19th C	13		wooden tank
TBA03	821	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBA03	822	Timber	105-110/200	820	1,2	N/A	18th-19th C	13		plank in floor of wooden tank
TBA03	823	Timber	105-110/200	820	1	N/A	18th-19th C	13		plank in floor of wooden tank
TBA03	824	Timber	105-110/200	820	1	N/A	18th-19th C	13		plank in floor of wooden tank
TBA03	825	Timber	105-110/200	820	1	N/A	18th-19th C	13		plank in floor of wooden tank
TBA03	826	Timber	105-110/200	820	1	N/A	18th-19th C	13		plank in floor of wooden tank
TBA03	827	Timber	105-110/200	820	1	N/A	18th-19th C	13		plank in floor of wooden tank
TBA03	828	Timber	105-110/200	820	1	N/A	18th-19th C	13		plank in floor of wooden tank
TBA03	829	Timber	105-110/200	820	1	N/A	18th-19th C	13		plank in floor of wooden tank
TBA03	830	Timber	105-110/200	820	1	N/A	18th-19th C	13		plank in floor of wooden tank
TBA03	831	Timber	105-110/200	820	1	N/A	18th-19th C	13		plank in floor of wooden tank
TBA03	832	Timber	105-110/200	820	N/A	N/A	18th-19th C	13		plank in floor of wooden tank
TBA03	833	Timber	105-110/200	820	N/A	N/A	18th-19th C	13		plank in floor of wooden tank
TBA03	834	Timber	105-110/200	820	2,3	N/A	18th-19th C	13		plank in floor of wooden tank
TBA03	835	Timber	105-110/200	820	1,2	N/A	18th-19th C	13		plank in western face of wooden tank
TBA03	836	Timber	105-110/200	820	1,2	N/A	18th-19th C	13		plank in western face of wooden tank
TBA03	837	Timber	105-110/200	820	1,2	N/A	18th-19th C	13		plank in western face of wooden tank
TBA03	838	Timber	105-110/200	820	1,2	N/A	18th-19th C	13		plank in northern face of wooden tank
TBA03	839	Timber	105-110/200	820	1,2	N/A	18th-19th C	13		plank in northern face of wooden tank
TBA03	840	Timber	105-110/200	820	1,2	N/A	18th-19th C	13		plank in northern face of wooden tank
TBA03	841	Timber	105-110/200	820	1,2	N/A	18th-19th C	13		plank in northern face of wooden tank
TBA03	842	Timber	105-110/200	N/A	1,2	N/A	18th-19th C	13		plank in northern face of wooden tank
TBA03	843	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBA03	844	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TBA03	845	Timber	105-110/200	820	3	N/A	18th-19th C	13	plank in eastern face of wooden tank
TBA03	846	Timber	105-110/200	820	3	N/A	18th-19th C	13	plank in eastern face of wooden tank
TBA03	847	Timber	105-110/200	820	3	N/A	18th-19th C	13	plank in eastern face of wooden tank
TBA03	848	Timber	105-110/200	N/A	3	N/A	18th-19th C	13	plank in eastern face of wooden tank
TBA03	849	group	105-110/200	N/A	N/A	N/A	18th-19th C	13	planks in upper floor of wooden tank
TBA03	850	group	105-110/200	N/A	1	N/A	18th-19th C	13	planks in north face of wooden tank
TBA03	851	group	110/200	N/A	2	N/A	18th-19th C	13	planks in eastern face of wooden tank
TBA03	852	group	105/200	N/A	3	N/A	18th-19th C	13	planks in west face of wooden tank
TBA03	853	Layer	105-110/200-205	853	N/A	N/A	19th C	14	construction debris for 1840's factory
TBA03	854	Fill	100-105/205	N/A	N/A	N/A	19th C	14	fill of [855]
TBA03	855	Cut	100-105/205	N/A	N/A	N/A	19th C	14	shallow pit cut
TBA03	856	Layer	105/205	N/A	N/A	N/A	19th C	14	mortar and rubble floor layer
TBA03	857	Fill	105-110/205	N/A	N/A	N/A	18th C	12	fill of [858]
TBA03	858	Cut	105-110/205	N/A	N/A	N/A	18th C	12	circular pit cut
TBA03	859	Timber	105-110/200	820	1,2	N/A	18th-19th C	13	plank in western face of wooden tank
TBA03	860	Layer	105-120/200-210	860	5,13	N/A	17th-18th C	11	make up layer
TBA03	861	Fill	110/205	N/A	N/A	N/A	18th C	12	fill of [862]
TBA03	862	Cut	110/205	N/A	N/A	N/A	18th C	12	posthole
TBA03	863	Timber	105-110/200	971	2	N/A	18th-19th C	13	bracing in lower floor of wooden tank
TBA03	864	Timber	105-110/200	971	2	N/A	18th-19th C	13	bracing in lower floor of wooden tank
TBA03	865	Timber	105-110/200	971	2	N/A	18th-19th C	13	cross beam in lower floor of wooden tank
TBA03	866	Timber	105-110/200	971	2,3	N/A	18th-19th C	13	cross beam in lower floor of wooden tank
TBA03	867	Timber	105-110/200	971	2,3	N/A	18th-19th C	13	cross beam in lower floor of wooden tank
TBA03	868	Layer	115/200-205	868	N/A	N/A	18th-19th C	13	fragmentary mortar floor surface
TBA03	869	Fill	115/200	N/A	N/A	N/A	18th-19th C	13	fill of [870]
TBA03	870	Cut	115/200	870	N/A	N/A	18th-19th C	13	shallow pit cut
TBA03	871	Fill	105/205	N/A	N/A	N/A	18th-19th C	13	fill of [872]
TBA03	872	Cut	105/205	872	N/A	N/A	18th-19th C	13	rubbish pit cut
TBA03	873	Fill	115/200	N/A	N/A	N/A	18th-19th C	13	fill of [874]
TBA03	874	Cut	115/200	874	N/A	N/A	18th-19th C	13	posthole
TBA03	875	Layer	110-115/200	875	N/A	N/A	18th-19th C	13	dump layer
TBA03	876	Cut	115/205-210	876	N/A	N/A	19th C	14	cut of well
TBA03	877	Fill	115/205-210	N/A	N/A	N/A	19th C	14	c/cut backfill of well [876]

TBA03	878	Masonry	115/205-210	876	N/A	N/A	19th C	14		well structure in [876]
TBA03	879	Fill	115/205-210	N/A	N/A	N/A	19th C	14		backfill of well [878]
TBA03	880	Fill	115/205-210	N/A	N/A	N/A	19th C	14		backfill of well [878]
TBA03	881	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBA03	882	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBA03	883	Fill	115/205		N/A	N/A	18th-19th C	13		fill of [885]
TBA03	884	Cut	115/205	884	N/A	N/A	18th-19th C	13		Posthole
TBA03	885	Timber	105-110/200	971	3	N/A	18th-19th C	13		end plank in lower floor of wooden tank
TBA03	886	Timber	105-110/200	971	1	N/A	18th-19th C	13		end plank in lower floor of wooden tank
TBA03	887	Timber	105-110/200	971	1,2	N/A	18th-19th C	13		plank in floor of wooden tank
TBA03	888	Timber	105-110/200	971	2,3	N/A	18th-19th C	13		bracing in lower floor of wooden tank
TBA03	889	Timber	105-110/200	971	2,3	N/A	18th-19th C	13		bracing in lower floor of wooden tank
TBA03	890	Fill	115/205-210	N/A	N/A	N/A	19th C	14		backfill of well [878]
TBA03	891	Masonry	105/200	on CAD	SS1	N/A	18th-19th C	13		same as wall [786]
TBA03	892	Masonry	105/200	on CAD	N/A	N/A	18th-19th C	13		brick pillar base
TBA03	893	Cut	115/210	895	N/A	N/A	18th-19th C	13		wall cut
TBA03	894	Fill	115/210	N/A	N/A	N/A	18th-19th C	13		backfill of c/cut [893]
TBA03	895	Masonry	115/210	895	N/A	N/A	18th-19th C	13		e/w wall fragment
TBA03	896	Fill	115/200	N/A	N/A	N/A	18th C	12		fill of barrel [898]
TBA03	897	Fill	115/200	N/A	N/A	N/A	18th C	12		primary fill of barrel [898]
TBA03	898	Timber	115/200	898	N/A	N/A	18th C	12		barrel
TBA03	899	Fill	115/200	N/A	N/A	N/A	18th C	12		backfill of c/cut [908] for barrel
TBA03	900	Fill	115/200	N/A	N/A	N/A	18th C	12		fill of wooden tank [968]
TBA03	901	Layer	105-120/200-210	901	13,14, 18	N/A	17th-18th C	11		consolidation ground raising layer
TBA03	902	Layer	115-120/200	902	N/A	N/A	18th-19th C	13		make up layer
TBA03	903	Cut	110/210	904	N/A	N/A	18th-19th C	13		cut of industrial setting
TBA03	904	Fill	110/210	904	N/A	N/A	18th-19th C	13		industrial setting [in [903]
TBA03	905	Timber	115/200	905	N/A	N/A	18th C	12		timber box drain
TBA03	906	Masonry	105/200	on CAD	N/A	N/A	18th-19th C	13		part of brick pillar base
TBA03	907	Fill	115/200	N/A	N/A	N/A	18th C	12		b/fill of c/cut for [905]
TBA03	908	Cut	115/200	908	N/A	N/A	18th C	12		cut for box drain [905] and barrel [898]
TBA03	909	Masonry	105/200	on CAD	N/A	N/A	18th-19th C	13		part of brick pillar base
TBA03	910	Masonry	105/200	on CAD	N/A	N/A	18th-19th C	13		part of brick pillar base

TBA03	911	Fill	110/200	N/A	SS1	N/A	18th-19th C	13		slaggy fill of [913]
TBA03	912	Fill	110/200	N/A	SS1	N/A	18th-19th C	13		fill of [913]
TBA03	913	Cut	110/200	N/A	SS1	N/A	18th-19th C	13		cut for brick pillar
TBA03	914	Layer	110/200	N/A	SS1	N/A	17th-18th C	11		dump layer = [853]
TBA03	915	Layer	110/200	N/A	SS1	N/A	17th-18th C	11		dump layer = [860]
TBA03	916	Layer	110/200	N/A	SS1	N/A	17th-18th C	11		dump layer = [901]
TBA03	917	Fill	110/200	N/A	SS1	N/A	18th-19th C	13		b/fill of c/cut for pillar
TBA03	918	Cut	110/200	N/A	SS1	N/A	18th-19th C	13		cut for pillar
TBA03	919	Masonry	110/200	N/A	SS1	N/A	18th-19th C	13		Pillar
TBA03	920	Masonry	110/200	N/A	SS1	N/A	18th-19th C	13		Pillar
TBA03	921	Fill	105/205-110/210	N/A	14	N/A	18th-19th C	13		backfill of robbed-out construction cut [922]
TBA03	922	Cut	105/205-110/210	N/A	14	N/A	18th-19th C	13		robbed-out construction cut
TBA03	923	Timber	110/200	N/A	SS1	N/A	18th-19th C	13		timber lacing course in pillar
TBA03	924	Fill	120/200	N/A	4	N/A	18th C	12		fill of ctp waste pit [929]
TBA03	925	Fill	120/200	N/A	4	N/A	18th C	12		fill of ctp waste pit [929]
TBA03	926	Fill	120/200	N/A	4	N/A	18th C	12		chalk lining of pit [929]
TBA03	927	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBA03	928	Fill	120/200	N/A	4	N/A	18th C	12		top fill of [929]
TBA03	929	Cut	120/200	N/A	4	N/A	18th C	12		cut of ctp waste pit
TBA03	930	Masonry	110/200	N/A	SS1	N/A	18th-19th C	13		n/s wall fragment
TBA03	931	Fill	105-110/200	820	N/A	N/A	18th-19th C	13		clay lining of wooden tank
TBA03	932	Layer	105/200	N/A	SS1	N/A	18th-19th C	13		bedding for wall [930]
TBA03	933	Layer	105/200	N/A	SS1	N/A	17th-18th C	11		layer same as [901]
TBA03	934	Layer	105/200	N/A	SS1	N/A	18th-19th C	13		bedding for wall [891]
TBA03	935	Cut	115/200-210	936	5	N/A	15th-16th C	9		n/s aligned drainage ditch
TBA03	936	Cut	115-120/200-205	936	N/A	N/A	15th-16th C	9		e/w aligned drainage slot
TBA03	937	Fill	115-120/200-205	N/A	N/A	N/A	15th-16th C	9		fill of [936]
TBA03	938	Fill	115/200-210	N/A	5	N/A	15th-16th C	9		backfill of ditch [935]
TBA03	939	Fill	115/200-210	N/A	5	N/A	15th-16th C	9		waterlain primary fill of ditch [935]
TBA03	940	Fill	115/200-210	N/A	5	N/A	15th-16th C	9		backfill of ditch [935]
TBA03	941	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBA03	942	Layer	105-120/200-210	N/A	5	N/A	15th-16th C	9		layer sealing western end of ditch [935]
TBA03	943	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TBA03	944	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBA03	945	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBA03	946	Masonry	110/205	946	N/A	N/A	18th-19th C	13		truncated masonry feature
TBA03	947	Fill	110/205	946	N/A	N/A	18th-19th C	13		b/fill of [948]
TBA03	948	Cut	110/205	946	N/A	N/A	18th-19th C	13		cut for [946]
TBA03	949	Layer	105-120/200-210	N/A	5	N/A	Roman	7		in Section 5 same as [1060]
TBA03	950	Timber	115/200-210	N/A	5	N/A	17th-18th C	11		timber box drain
TBA03	951	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	952	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	953	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	954	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	955	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	956	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	957	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	958	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	959	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	960	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	961	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	962	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	963	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	964	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	965	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	966	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	967	Timber	105-110/200	971	N/A	N/A	18th-19th C	13		plank in lower floor of wooden tank
TBA03	968	Timber	115/200	968	N/A	N/A	18th C	12		square wooden tank/tanning pit
TBA03	969	group	115/200	969	N/A	N/A	18th C	12		collapsed timbers from [968]
TBA03	970	Cut	115/200	970	N/A	N/A	18th C	12		cut for [968]
TBA03	971	group	105-110/200	971	N/A	N/A	18th-19th C	13		planks in lower floor of wooden tank
TBA03	972	Fill	115/210	972	N/A	N/A	18th-19th C	13		fill/layer continues to north beyond [895]
TBA03	973	Layer	105/200	973	SS1	N/A	18th-19th C	13		layer beneath [891]
TBA03	974	Timber	115/200	974	969	N/A	18th C	12		collapsed timbers from [968]
TBA03	975	Timber	115/200	975	969	N/A	18th C	12		collapsed timbers from [968]
TBA03	976	Timber	115/200	976	969	N/A	18th C	12		collapsed timbers from [968]

TBA03	977	Timber	115/200	977	969	N/A	18th C	12	collapsed timbers from [968]
TBA03	978	Timber	115/200	978	969	N/A	18th C	12	collapsed timbers from [968]
TBA03	979	Timber	115/200	979	969	N/A	18th C	12	collapsed timbers from [968]
TBA03	980	Layer	110/200	980	N/A	N/A	L19th-20thC	15	sandy layer
TBA03	981	Layer	105-120/200-210	N/A	5	N/A	17th-18th C	11	waterlain layer on Section 5
TBA03	982	Layer	105-120/200-210	N/A	5	N/A	Natural	1	natural sand cut by stakeholes in Section 5
TBA03	983	Layer	105-120/200-210	N/A	5	N/A	Natural	1	disturbed natural sand in Section 5
TBA03	984	Layer	105-120/200-210	N/A	5	13	IA	5	possible buried soil horizon
TBA03	985	Fill	105-110/200	N/A	N/A	N/A	18th-19th C	13	backfill of c/cut [752]
TBA03	986	Timber	115/200	986	N/A	N/A	18th C	12	top of barrel
TBA03	987	Fill	115/200	N/A	N/A	N/A	18th C	12	fill of [986]
TBA03	988	Fill	115/200	N/A	N/A	N/A	18th C	12	b/fill of [970]
TBA03	989	Layer	100/200	N/A	8	N/A	17th-18th C	11	made ground
TBA03	990	Layer	100/200	N/A	8	N/A	17th-18th C	11	levelling dump
TBA03	991	Fill	100/200	N/A	8	N/A	17th-18th C	11	upper fill of cut [995] for log drain
TBA03	992	Timber	100/200	1076	8	N/A	17th-18th C	11	log drain
TBA03	993	Timber	100/200	1076	N/A	N/A	17th-18th C	11	log drain
TBA03	994	Fill	100/200	1076	8	N/A	17th-18th C	11	fill of cut [995] for log drain
TBA03	995	Cut	100/200	1076	8	N/A	17th-18th C	11	cut of log drain
TBA03	996	Layer	100/200	1076	8	N/A	17th-18th C	11	waterlain layer
TBA03	997	Timber	115/200	969	N/A	N/A	18th C	12	collapsed timbers from [968]
TBA03	998	Timber	115/200	969	N/A	N/A	18th C	12	collapsed timbers from [968]
TBA03	999	Timber	115/200	969	N/A	N/A	18th C	12	collapsed timbers from [968]
TBA03	1000	Fill	105/205	N/A	N/A	1	17th-18th C	11	fill of wattle lined pit [1002]
TBA03	1001	Timber	105/205	1002	N/A	2	17th-18th C	11	wattle lining of pit [1002]
TBA03	1002	Cut	105/205	1002	N/A	N/A	17th-18th C	11	cut of wattle lined pit
TBA03	1003	Timber	100/200	1055	6	N/A	17th-18th C	11	log drain in [1006]
TBA03	1004	Timber	100/200	1004	6	N/A	17th-18th C	11	log drain in [1006]
TBA03	1005	Timber	100/200	1005	6	N/A	17th-18th C	11	plank supporting log drain
TBA03	1006	Cut	100/200	1006	6	N/A	17th-18th C	11	cut for log drain
TBA03	1007	Fill	100/200	N/A	6	N/A	17th-18th C	11	fill of [1006]
TBA03	1008	Fill	100/200	N/A	6	N/A	17th-18th C	11	b/fill of cut for drain
TBA03	1009	Fill	110-115/200-205	N/A	N/A	4	15th-16th C	9	waterlain fill of ditch [1010]

TBA03	1010	Cut	110-115/200-205	1010	N/A	N/A	15th-16th C	9	ne/sw aligned ditch cut
TBA03	1011	Fill	105/200-210	1012	7	N/A	15th-16th C	9	fill of ditch [1012]
TBA03	1012	Cut	105/200-210	1012	7,17	N/A	15th-16th C	9	n/s ditch recut of [1014]
TBA03	1013	Fill	105/200-210	N/A	7	N/A	15th-16th C	9	fill of ditch [1014]
TBA03	1014	Cut	105/200-210	N/A	7	N/A	15th-16th C	9	n/s ditch cut
TBA03	1015	Fill	110-115/200-205	N/A	N/A	N/A	15th-16th C	9	fill of [1010]
TBA03	1016	Fill	110/205	N/A	N/A	N/A	16th-17th C	10	fill of slot [1017]
TBA03	1017	Cut	110/205	1017	N/A	N/A	16th-17th C	10	linear slot
TBA03	1018	Fill	120/210	N/A	N/A	N/A	17th-18th C	11	fill of [1019]
TBA03	1019	Cut	120/210	1019	N/A	N/A	17th-18th C	11	Posthole
TBA03	1020	Fill	115/200	N/A	N/A	N/A	17th-18th C	11	fill of barrel [1023]
TBA03	1021	Fill	115/200	N/A	N/A	N/A	17th-18th C	11	fill of barrel [1023]
TBA03	1022	Fill	115/200	N/A	N/A	N/A	17th-18th C	11	b/fill of c/cut for barrel [1023]
TBA03	1023	Timber	115/200	1023	N/A	N/A	17th-18th C	11	barrel
TBA03	1024	Cut	115/200	1024	N/A	N/A	17th-18th C	11	cut for barrel [1023]
TBA03	1025	Fill	105-115/205	N/A	N/A	N/A	16th-17th C	10	fill of [1026]
TBA03	1026	Cut	105-115/205	1026	N/A	N/A	16th-17th C	10	beam slot
TBA03	1027	Fill	110/205	N/A	N/A	N/A	16th-17th C	10	fill of [1028]
TBA03	1028	Cut	110/205	1026	N/A	N/A	16th-17th C	10	Posthole
TBA03	1029	Fill	110/205	N/A	N/A	N/A	16th-17th C	10	fill of [1030]
TBA03	1030	Cut	110/205	1026	N/A	N/A	16th-17th C	10	Posthole
TBA03	1031	Fill	105-110/205	N/A	N/A	N/A	16th-17th C	10	fill of [1032]
TBA03	1032	Cut	105-110/205	1026	N/A	N/A	16th-17th C	10	Posthole
TBA03	1033	Timber	110/200	1033	N/A	N/A	18th C	12	well cap/floor
TBA03	1034	Masonry	110/200	1034	N/A	N/A	18th C	12	Well
TBA03	1035	Cut	110/200	1035	N/A	N/A	18th C	12	c/cut for well [1034]
TBA03	1036	Fill	120/210	N/A	18	N/A	17th-18th C	11	fill of linear slot [1037]
TBA03	1037	Cut	120/210	1037	18	N/A	17th-18th C	11	linear slot
TBA03	1038	Fill	115-120/200	N/A	N/A	N/A	17th-18th C	11	fill of linear slot [1040]
TBA03	1039	Fill	115-120/200	N/A	N/A	N/A	17th-18th C	11	fill of linear slot [1040]
TBA03	1040	Cut	115-120/200	1040	N/A	N/A	17th-18th C	11	linear slot
TBA03	1041	Fill	105/205-210	N/A	N/A	N/A	17th-18th C	11	backfill of tanning pit [1043]
TBA03	1042	Timber	105/205-210	N/A	N/A	N/A	17th-18th C	11	wattle lining of pit [1043]

TBA03	1043	Cut	105/205-210	1043	N/A	N/A	17th-18th C	11	tanning pit
TBA03	1044	Fill	105/205-210	N/A	N/A	5	17th-18th C	11	backfill of tanning pit [1046]
TBA03	1045	Timber	105/205-210	N/A	N/A	N/A	17th-18th C	11	wattle lining of pit [1046]
TBA03	1046	Cut	105/205-210	1046	N/A	N/A	17th-18th C	11	tanning pit
TBA03	1047	Fill	110/205	N/A	N/A	N/A	16th-17th C	10	fill of [1048]
TBA03	1048	Cut	110/205	1048	N/A	N/A	16th-17th C	10	Stakehole
TBA03	1049	Fill	120/200-205	N/A	N/A	N/A	15th-16th C	9	fill of [1050]
TBA03	1050	Cut	120/200-205	1050	N/A	N/A	15th-16th C	9	linear slot
TBA03	1051	Fill	120/200-205	N/A	N/A	3	15th-16th C	9	fill of [1050]
TBA03	1052	Fill	120/200-205	N/A	N/A	N/A	15th-16th C	9	fill of [1050]
TBA03	1053	Fill	120/210	N/A	18	N/A	17th-18th C	11	fill of [1054]
TBA03	1054	Cut	120/210	1054	18	N/A	17th-18th C	11	linear slot
TBA03	1055	structure	100/200-205	1055	N/A	N/A	17th-18th C	11	log drain
TBA03	1056	Fill	105/205-210	N/A	N/A	N/A	17th-18th C	11	b/fill of cut [1057] for tanning pits
TBA03	1057	Cut	105/205-210	1057	N/A	N/A	17th-18th C	11	cut for tanning pits
TBA03	1058	Fill	105-110/210	N/A	N/A	N/A	17th-18th C	11	fill of cut [1059] of tanning pit
TBA03	1059	Cut	105-110/210	1059	N/A	N/A	17th-18th C	11	tanning pit
TBA03	1060	Layer	105-120/200-210	1060	9,10,11, 13,16	12	Roman	7	same as [1083] waterlain sandy silts (colluvium?)
TBA03	1061	Layer	105-115/200-210	N/A	10,13, 14,15, 16	12	17th-18th C	11	waterlain silty clays
TBA03	1062	Cut	105/210	N/A	11,14	N/A	15th-16th C	9	overflow ditch
TBA03	1063	Fill	105/210	1063	11,14	N/A	15th-16th C	9	fill of [1062]
TBA03	1064	Fill	105/205	N/A	N/A	N/A	16th-17th C	10	fill of [1065]
TBA03	1065	Cut	105/205	1026	N/A	N/A	16th-17th C	10	Posthole
TBA03	1066	Fill	105/205	N/A	N/A	N/A	16th-17th C	10	fill of [1067]
TBA03	1067	Cut	105/205	1026	N/A	N/A	16th-17th C	10	Posthole
TBA03	1068	Fill	105/205	N/A	N/A	N/A	16th-17th C	10	fill of [1069]
TBA03	1069	Cut	105/205	1026	N/A	N/A	16th-17th C	10	Posthole
TBA03	1070	Fill	110/205	N/A	N/A	N/A	16th-17th C	10	fill of [1071]
TBA03	1071	Cut	110/205	1026	N/A	N/A	16th-17th C	10	Posthole
TBA03	1072	Fill	110/205	N/A	N/A	N/A	16th-17th C	10	fill of [1073]
TBA03	1073	Cut	110/205	1026	N/A	N/A	16th-17th C	10	Posthole
TBA03	1074	Fill	110/205	N/A	N/A	N/A	16th-17th C	10	fill of [1075]

TBA03	1075	Cut	110/205	1026	12,15,16	N/A	16th-17th C	10		Posthole
TBA03	1076	structure	100/200	1076	8	N/A	17th-18th C	11		log drain
TBA03	1077	Fill	115-120/200-205	1079	12,15, 16,18	13	BA/IA	4		top fill of ditch cut F847[1079]
TBA03	1078	Fill	115-120/200-205	N/A	12,15, 16,18	6, 13	BA/IA	4		primary fill of ditch cut [1079]
TBA03	1079	Cut	115-120/200-205	1079	12,15, 16,18	N/A	BA/IA	4		linear drainage cut
TBA03	1080	Timber	105-110/200	1080	13	N/A	18th C	12		timber box drain
TBA03	1081	Cut	110/210	1081	10,14	N/A	Roman	7		linear cut
TBA03	1082	Fill	110/210	1082	10,14	7	Roman	7		fill of [1081]
TBA03	1083	Layer	115-120/200-210	1083	15,18	13	Roman	7		same as [1060] waterlain sandy silts (colluvium?)
TBA03	1084	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBA03	1085	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBA03	1086	Cut	110/200	1091	N/A	N/A	Neolithic	2		linear slot or natural depression
TBA03	1087	Fill	110/200	N/A	N/A	N/A	Neolithic	2		fill of [1086]
TBA03	1088	Cut	110/200	1091	N/A	N/A	Neolithic	2		linear slot or natural depression
TBA03	1089	Fill	110/200	N/A	N/A	N/A	Neolithic	2		fill of [1088]
TBA03	1090	Layer	105-120/200-210	N/A	9,15,16	9	Neo/BA	3		reworked natural sands
TBA03	1091	Layer	105-120/200-210	1091	9,10,11, 14	N/A	Natural	1		natural sand cut by stakeholes
TBA03	1092	Cut	110/205	N/A	9	N/A	BA/IA	4		stakeholes cut into natural sand [1091]
TBA03	1093	Fill	110/205	N/A	N/A	N/A	BA/IA	4		fill of [1092]
TBA03	1094	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBA03	1095	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBA03	1096	Fill	115/200	N/A	N/A	8	Neolithic	2		fill of probable tree throw [1097]
TBA03	1097	Cut	115/200	1097	N/A	N/A	Neolithic	2		tree throw
TBA03	1098	Cut	110/200	N/A	13	N/A	17th-18th C	11		pit cut
TBA03	1099	Fill	110/200	N/A	13	N/A	17th-18th C	11		fill of [1098]
TBA03	1100	Cut	110/200	N/A	13	N/A	17th-18th C	11		pit cut
TBA03	1101	Fill	110/200	N/A	13	N/A	17th-18th C	11		fill of [1101]
TBA03	1102	Fill	110/200	N/A	13	10	17th-18th C	11		fill of [1115]
TBA03	1103	Fill	110/200	N/A	13	12	17th-18th C	11		fill of [1114]
TBA03	1104	Cut	110/210	1104	10,14	N/A	BA/IA	4		same as [1079]
TBA03	1105	Fill	110/210	N/A	10,14	N/A	BA/IA	4		same as [1077]

TBA03	1106	Fill	110/210	N/A	10,14	N/A	BA/IA	4		same as [1078]
TBA03	1107	Timber	105/210	N/A	11	N/A	16th-17th C	10		rotted stake in [1108]
TBA03	1108	Cut	105/210	N/A	11	N/A	16th-17th C	10		Stakehole
TBA03	1109	Cut	105/210	N/A	11	N/A	16th-17th C	10		Posthole
TBA03	1110	Timber	105/210	N/A	11	N/A	16th-17th C	10		post in posthole [1109]
TBA03	1111	Fill	105/210	N/A	14	N/A	15th-16th C	9		fill of [1062]
TBA03	1112	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBA03	1113	Layer	110/200	N/A	13	N/A	17th-18th C	11		dump layer
TBA03	1114	Cut	110/210	N/A	13	N/A	18th C	12		cut for box drain
TBA03	1115	Cut	110/210	N/A	13	N/A	18th C	12		pit cut
TBA03	1116	Fill	105/205	N/A	17	11	15th-16th C	9		fill of cut [1117]
TBA03	1117	Cut	105/205	N/A	17	N/A	15th-16th C	9		same as [1114] recut of ditch
TBA03	1118	Fill	105/205	N/A	17	11	15th-16th C	9		fill of cut [1012]
TBA03	1119	Fill	105/205	N/A	17	11	15th-16th C	9		fill of cut [1012]
TBA03	1120	Fill	105/205	N/A	17	11	15th-16th C	9		fill of cut [1012]
TBA03	1121	Fill	105/205	N/A	17	11	15th-16th C	9		fill of cut [1012]
TBA03	1122	Fill	105/205	N/A	17	N/A	15th-16th C	9		fill of cut [1125]
TBA03	1123	Fill	105/205	N/A	17	N/A	15th-16th C	9		fill of cut [1125]
TBA03	1124	Fill	105/205	N/A	17	N/A	15th-16th C	9		fill of cut [1125]
TBA03	1125	Cut	105/205	N/A	17	N/A	15th-16th C	9		recut of ditch
TBA03	1126	Timber	105/205	1012	N/A	N/A	15th-16th C	9		Stake
TBA03	1127	group	105-120/200-210	1091	N/A	N/A	BA/IA	4		stakeholes cut into natural sand [1091]
TBA03	1128 - 1149: Not Used									
TBB03	1150	Layer	160/390-5	1150	1	N/A	17th-18th C	11		modern levelling layer
TBB03	1151	Layer	160/390-5	1150	1	N/A	17th-18th C	11		bone levelling layer with metapodials
TBB03	1152	Layer	160/390-5	N/A	1	N/A	17th-18th C	11		levelling layer
TBB03	1153	Layer	160/390-5	1153	1	N/A	17th-18th C	11		sandy silt layer
TBB03	1154	Layer	160/390-400	1154	1,6	N/A	4th-15th C	8		waterlain layer
TBB03	1155	Layer	160/390-5	1155	1,6	N/A	IA	5		buried land surface with oxidisation
TBB03	1156	Layer	160/390-5	1156	1,6	N/A	Neo/BA	3		reworked natural sand
TBB03	1157	Layer	160/390	N/A	1	N/A	Natural	1		natural sand layer = [1585]
TBB03	1158	Fill	160/390	N/A	1	N/A	Neo/BA	3		fill of amorphous cut [1159] in Section 1
TBB03	1159	Cut	160/390	N/A	1	N/A	Neo/BA	3		amorphous cut in Section 1

TBB03	1160	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1161	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1162	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1163	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1164	Fill	160/390-5	1150	N/A	N/A	18th C	12		fill of rubbish pit [1165]
TBB03	1165	Cut	160/390-5	1150	N/A	N/A	18th C	12		rubbish pit
TBB03	1166	Layer	160/390-5	1150	N/A	N/A	18th-19th C	13		sandy clay levelling layer
TBB03	1167	Layer	160/390-5	1150	N/A	N/A	18th-19th C	13		small area of mortar
TBB03	1168	Fill	160/390-5	1169	1	N/A	18th C	12		fill of [1169]
TBB03	1169	Cut	160/390-5	1169	1	N/A	18th C	12		linear cut
TBB03	1170	Fill	160/390-5	1150	1	N/A	18th C	12		fill of [1169]
TBB03	1171	Timber	160/390-5	N/A	1	N/A	18th C	12		timber lining of probable tanning pit [1169]
TBB03	1172	Fill	160/390-5	1153	1	N/A	18th C	12		fill of [1173] = [1286]
TBB03	1173	Cut	160/390-5	N/A	1	N/A	18th C	12		linear cut
TBB03	1174	Layer	170/405	1174	N/A	N/A	18th C	12		bedding layer
TBB03	1175	Fill	170/405	1174	N/A	N/A	18th C	12		lime fill of [1177]
TBB03	1176	Timber	170/405	1174	N/A	N/A	18th C	12		timber lining of [1177]
TBB03	1177	Cut	170/405	1174	N/A	N/A	18th C	12		cut
TBB03	1178	Fill	170/405	N/A	N/A	N/A	18th C	12		fill of posthole [1179]
TBB03	1179	Cut	170/405	N/A	N/A	N/A	18th C	12		Posthole
TBB03	1180	Fill	170/405	1174	N/A	N/A	18th C	12		fill of posthole [1181]
TBB03	1181	Cut	170/405	1174	N/A	N/A	18th C	12		Posthole
TBB03	1182	Fill	170/405	1174	N/A	N/A	18th C	12		fill of posthole [1183]
TBB03	1183	Cut	170/405	1174	N/A	N/A	18th C	12		Posthole
TBB03	1184	Fill	170/405	1174	N/A	N/A	18th C	12		fill of posthole [1185]
TBB03	1185	Cut	170/405	1174	N/A	N/A	18th C	12		Posthole
TBB03	1186	Fill	170/405	1174	N/A	N/A	18th C	12		fill of posthole [1187]
TBB03	1187	Cut	170/405	1174	N/A	N/A	18th C	12		Posthole
TBB03	1188	Fill	170/405	N/A	N/A	N/A	18th C	12		fill of beam slot [1189]
TBB03	1189	Cut	170/405	1174	N/A	N/A	18th C	12		beam slot
TBB03	1190	Fill	170/405	N/A	N/A	N/A	18th C	12		clinker fill of fireplace [1191]
TBB03	1191	Masonry	170/405	1174	N/A	N/A	18th C	12		Fireplace
TBB03	1192	Cut	170/405	1174	N/A	N/A	18th C	12		c/cut for fireplace [1191]

TBB03	1193	Layer	170/405	1174	N/A	N/A	18th C	12		internal gravel surface	
TBB03	1194	Fill	165-170/405	N/A	N/A	N/A	18th C	12		fill of beam slot [1195]	
TBB03	1195	Cut	165-170/405	1174	N/A	N/A	18th C	12		beam slot	
TBB03	1196	Layer	165-170/405	1174	N/A	N/A	18th C	12		make up layer	
TBB03	1197	Fill	165-170/405	1174	N/A	N/A	18th C	12		post-med dump layer	
TBB03	1198	Fill	165-170/405	N/A	N/A	N/A	18th C	12		fill of [1199]	
TBB03	1199	Cut	165-170/405	1174	N/A	N/A	18th C	12		Posthole	
TBB03	1200	Fill	165-170/405	N/A	N/A	N/A	18th C	12		fill of [1201]	
TBB03	1201	Cut	165-170/405	1174	N/A	N/A	18th C	12		Posthole	
TBB03	1202	Fill	165-170/405	1174	N/A	N/A	18th C	12		fill of [1203]	
TBB03	1203	Cut	165-170/405	1174	N/A	N/A	18th C	12		Posthole	
TBB03	1204	Fill	170/405	1174	N/A	N/A	18th C	12		fill of [1205]	
TBB03	1205	Cut	170/405	1174	N/A	N/A	18th C	12		Posthole	
TBB03	1206	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A
TBB03	1207	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A
TBB03	1208	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A
TBB03	1209	Fill	160/395	N/A	N/A	N/A	17th-18th C	11		fill of posthole [1210]	
TBB03	1210	Cut	160/395	1153	N/A	N/A	17th-18th C	11		Posthole	
TBB03	1211	Fill	160/395	N/A	N/A	N/A	17th-18th C	11		fill of posthole [1212]	
TBB03	1212	Cut	160/395	1153	N/A	N/A	17th-18th C	11		Posthole	
TBB03	1213	Fill	160/395	N/A	N/A	N/A	17th-18th C	11		fill of posthole [1214]	
TBB03	1214	Cut	160/395	1153	N/A	N/A	17th-18th C	11		Posthole	
TBB03	1215	Fill	160/395	N/A	N/A	N/A	17th-18th C	11		fill of posthole [1216]	
TBB03	1216	Cut	160/395	1153	N/A	N/A	17th-18th C	11		Posthole	
TBB03	1217	Fill	160/395	N/A	N/A	N/A	17th-18th C	11		fill of posthole [1218]	
TBB03	1218	Cut	160/395	1153	N/A	N/A	17th-18th C	11		Posthole	
TBB03	1219	Fill	160/395	N/A	N/A	N/A	17th-18th C	11		fill of posthole [1220]	
TBB03	1220	Cut	160/395	1153	N/A	N/A	17th-18th C	11		Posthole	
TBB03	1221	Fill	160/395	N/A	N/A	N/A	17th-18th C	11		fill of posthole [1222]	
TBB03	1222	Cut	160/395	1153	N/A	N/A	17th-18th C	11		Posthole	
TBB03	1223	Fill	160/395-400	N/A	N/A	N/A	17th-18th C	11		fill of posthole [1224]	
TBB03	1224	Cut	160/395-400	1153	N/A	N/A	17th-18th C	11		Posthole	
TBB03	1225	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A

TBB03	1226	Fill	160/395-400	N/A	3	N/A	18th C	12		upper fill of cut [1286]
TBB03	1227	Fill	160/395-400	N/A	3	N/A	18th C	12		fill of cut [1286]
TBB03	1228	Fill	160/395-400	N/A	3	N/A	18th C	12		fill of cut [1286]
TBB03	1229	Fill	160/395-400	N/A	3	N/A	18th C	12		fill of linear cut [1286] (same as [1285])
TBB03	1230	Fill	160/395-400	N/A	3	N/A	17th-18th C	11		silting of [1232]
TBB03	1231	Fill	160/400	N/A	3	N/A	17th-18th C	11		fill of feature only seen in S. 3
TBB03	1232	Fill	160-165/400	N/A	3	N/A	17th-18th C	11		waterlain fill of [1234]
TBB03	1233	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1234	cut	160-165/400	N/A	3	N/A	17th-18th C	11		cut, only visible in section 3
TBB03	1235	structure	160/390	N/A	N/A	N/A	L19th-20thC	15		industrial circular tank
TBB03	1236	Fill	160/395	N/A	N/A	N/A	17th-18th C	11		fill of posthole [1237]
TBB03	1237	Cut	160/395	1153	N/A	N/A	17th-18th C	11		Posthole
TBB03	1238	Fill	170/390	N/A	2	N/A	L19th-20thC	15		b/fill of c/cut [1239] (same as [1241])
TBB03	1239	Cut	170/390	N/A	2	N/A	L19th-20thC	15		modern cut
TBB03	1240	Layer	170/390	N/A	2	N/A		1		natural sand = [1157]
TBB03	1241	Fill	170/390	N/A	2	N/A	L19th-20thC	15		b/fill of c/cut [1239] (same as [1238])
TBB03	1242	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1243	Layer	170/390	N/A	2	N/A		3		reworked natural sand
TBB03	1244	Layer	170/390	N/A	2	N/A		14		reworked natural sand
TBB03	1245	Layer	170/390	N/A	2	N/A		14		dump layer
TBB03	1246	Fill	165/400	N/A	4	N/A	18th C	12		backfill of robbed out tanning pit = [1484]
TBB03	1247	Cut	165/400	1174, 1279	4	N/A	18th C	12		northern limit of cut [1485]
TBB03	1248	Fill	170/400-405	1279	4	N/A	18th C	12		fill of robbed out drain cut [1249]
TBB03	1249	Cut	170/400-405	1279	4	N/A	18th C	12		drain cut
TBB03	1250	Fill	170/400-405	N/A	4	N/A	18th C	12		fill of post-med cut [1251]
TBB03	1251	Cut	170/400-405	N/A	4	N/A	18th C	12		post-med cut
TBB03	1252	Layer	170/400-405	1197	4	N/A	18th C	12		post med dump layer
TBB03	1253	Layer	170/400-405	N/A	4	N/A	17th-18th C	11		post med dump layer
TBB03	1254	Layer	170/400-405	N/A	4	N/A	17th-18th C	11		post med dump layer
TBB03	1255	Layer	170/400-405	N/A	4	N/A	17th-18th C	11		post med dump layer
TBB03	1256	Layer	170/400-405	N/A	4	N/A	17th-18th C	11		post med dump layer
TBB03	1257	Layer	170/400-405	N/A	4	N/A	17th-18th C	11		post med dump layer
TBB03	1258	Fill	170-175/405	N/A	N/A	N/A	18th C	12		fill of possible beam slot [1259]

TBB03	1259	Cut	170-175/405	N/A	N/A	N/A	18th C	12		possible beam slot
TBB03	1260	Fill	170/400	1174	N/A	N/A	18th C	12		fill of pit [1261]
TBB03	1261	Cut	170/400	1174	N/A	N/A	18th C	12		rubbish pit
TBB03	1262	Layer	170-175/405	1174	N/A	N/A	18th C	12		floor surface
TBB03	1263	Fill	160/395	N/A	N/A	N/A	17th-18th C	11		fill of [1264]
TBB03	1264	Cut	160/395	1264	N/A	N/A	17th-18th C	11		beam slot
TBB03	1265	Fill	160/395	N/A	N/A	N/A	17th-18th C	11		fill of [1266]
TBB03	1266	Cut	160/395	1264	N/A	N/A	17th-18th C	11		beam slot
TBB03	1267	Fill	160/395	N/A	N/A	N/A	17th-18th C	11		fill of [1268]
TBB03	1268	Cut	160/395	1268	N/A	N/A	17th-18th C	11		beam slot
TBB03	1269	Fill	160/395	N/A	N/A	N/A	17th-18th C	11		fill of [1270]
TBB03	1270	Cut	160/395	1270	N/A	N/A	17th-18th C	11		beam slot
TBB03	1271	Fill	160/395	N/A	N/A	N/A	17th-18th C	11		fill of posthole [1272]
TBB03	1272	Cut	160/395	1272	N/A	N/A	17th-18th C	11		Posthole
TBB03	1273	Fill	165/395	N/A	N/A	N/A	18th C	12		fill of [1270]
TBB03	1274	Cut	165/395	1274	N/A	N/A	18th C	12		beam slot
TBB03	1275	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1276	Masonry	170/400	1174, 1274	N/A	N/A	18th C	12		wall fragment
TBB03	1277	Fill	165/390	N/A	N/A	N/A	18th C	12		fill of pit cut [1277]
TBB03	1278	Cut	165/390	1278	N/A	N/A	18th C	12		pit cut
TBB03	1279	Layer	170-175/405	1279	3	N/A	17th-18th C	11		dump layer = [1253]
TBB03	1280	Layer	175/405	1279	N/A	N/A	17th-18th C	11		dump layer
TBB03	1281	Layer	170/405	1279	N/A	N/A	17th-18th C	11		bone floor
TBB03	1282	Layer	170-175/405	1279	N/A	N/A	17th-18th C	11		crushed brick and mortar floor
TBB03	1283	Fill	170-175/400	1279	N/A	N/A	18th C	12		fill of [1284]
TBB03	1284	Cut	170-175/400	1279	N/A	N/A	18th C	12		foundation cut
TBB03	1285	Fill	160-165/390-400	1150, 1153	1	N/A	18th C	12		fill of [1286]
TBB03	1286	Cut	160-165/390-400	1286, 1150, 1153	1, 3	N/A	18th C	12		north-south linear cut
TBB03	1287	Fill	170/390-405	N/A	N/A	N/A	17th-18th C	11		b/fill of [1288]
TBB03	1288	Cut	170/390-405	1288	N/A	N/A	17th-18th C	11		cut for tanning pits
TBB03	1289	Cut	165/390	1289	N/A	N/A	18th C	12		c/cut for timber-lined pit
TBB03	1290	Fill	170-175/405	N/A	N/A	N/A	17th-18th C	11		fill of [1291]
TBB03	1291	Cut	170-175/405	1291	N/A	N/A	17th-18th C	11		pit cut

TBB03	1292	Fill	170/395-400	N/A	N/A	N/A	17th-18th C	11	fill of [1293]
TBB03	1293	Cut	170/395-400	1293	N/A	N/A	17th-18th C	11	tanning pit
TBB03	1294	Timber	165/390	1294	N/A	N/A	18th C	12	timber-lining of pit [1289]
TBB03	1295	Timber	165/390	1294	N/A	N/A	18th C	12	timber-lining of pit [1289]
TBB03	1296	Timber	165/390	1294	N/A	N/A	18th C	12	timber-lining of pit [1289]
TBB03	1297	Timber	165/390	1294	N/A	N/A	18th C	12	timber-lining of pit [1289]
TBB03	1298	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1299	Timber	165/390	1294	N/A	N/A	18th C	12	timber-lining of pit [1289]
TBB03	1300	Timber	165/390	1294	N/A	N/A	18th C	12	timber-lining of pit [1289]
TBB03	1301	Timber	165/390	1294	N/A	N/A	18th C	12	timber-lining of pit [1289]
TBB03	1302	Timber	165/390	1294	N/A	N/A	18th C	12	timber-lining of pit [1289]
TBB03	1303	Timber	165/390	1294	N/A	N/A	18th C	12	timber-lining of pit [1289]
TBB03	1304	Timber	165/390	1294	N/A	N/A	18th C	12	timber-lining of pit [1289]
TBB03	1305	Timber	165/390	1294	N/A	N/A	18th C	12	timber-lining of pit [1289]
TBB03	1306	Fill	165/390	N/A	N/A	N/A	18th C	12	backfill of tanning pit [1289]
TBB03	1307	Timber	165/390	1307	N/A	N/A	18th C	12	timber support in [1289]
TBB03	1308	Fill(s)	160-165/390-400	N/A	N/A	N/A	18th C	12	group fill no. for stakeholes [1309]
TBB03	1309	Cut(s)	160-165/390-400	1309	5	N/A	18th C	12	group cut no. for stakeholes
TBB03	1310	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole [1311]
TBB03	1311	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1312	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole [1313]
TBB03	1313	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1314	Fill	165/396	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole [1315]
TBB03	1315	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1316	Fill	165/400	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1317	Cut	165/400	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1318	Fill	165/400	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1319	Cut	165/400	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1320	Fill	165/400	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1321	Cut	165/400	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1322	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1323	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1324	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole

TBB03	1325	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1326	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1327	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1328	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1329	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1330	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1331	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1332	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1333	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1334	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1335	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1336	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1337	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1338	Fill	165/400	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1339	Cut	165/400	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1340	Fill	165/400	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1341	Cut	165/400	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1342	Fill	165/400	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1343	Cut	165/400	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1344	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1345	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1346	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1347	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1348	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1349	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1350	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1351	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1352	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1353	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1354	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1355	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1356	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1357	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]

TBB03	1358	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1359	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1360	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1361	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1362	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1363	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1364	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1365	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1366	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1367	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1368	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1369	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1370	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1371	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1372	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1373	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1374	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1375	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1376	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1377	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1378	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1379	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1380	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1381	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1382	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1383	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1384	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1385	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1386	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1387	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1388	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1389	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1390	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole

TBB03	1391	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1392	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1393	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1394	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1395	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1396	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1397	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1398	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1399	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1400	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1401	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1402	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1403	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1404	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1405	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1406	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1407	Cut	165/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1408	Fill	160/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1409	Cut	160/395	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1410	Fill	160/390	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1411	Cut	160/390	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1412	Fill	160/390	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1413	Cut	160/390	1309	5	N/A	18th C	12	stake/posthole in base of [1286]
TBB03	1414	Timber	160/395	N/A	N/A	N/A	18th C	12	plank in [1286]
TBB03	1415	Fill	170/395	N/A	N/A	N/A	17th-18th C	11	fill of [1416]
TBB03	1416	Cut	170/395	1416	N/A	N/A	17th-18th C	11	pit cut
TBB03	1417	Fill	170/405	N/A	N/A	N/A	17th-18th C	11	fill of [1418]
TBB03	1418	Cut	170/405	1418	N/A	N/A	17th-18th C	11	beam slot
TBB03	1419	Timber	160/390	1419	N/A	N/A	L19th-20thC	15	wedges driven into sand natural
TBB03	1420	Timber	160/390	1419	N/A	N/A	L19th-20thC	15	wedges driven into sand natural
TBB03	1421	Timber	160/390	1419	N/A	N/A	L19th-20thC	15	wedges driven into sand natural
TBB03	1422	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of stakehole/posthole
TBB03	1423	Cut	165/395	N/A	N/A	N/A	18th C	12	stake/posthole in base of [1286]

TBB03	1424	Fill	170/395	N/A	N/A	N/A	17th-18th C	11	fill of [1425] = [1535]
TBB03	1425	Cut	170/395	1425	N/A	N/A	17th-18th C	11	beam slot = [1536]
TBB03	1426	Fill	170/395	N/A	N/A	N/A	17th-18th C	11	fill of [1427] = [1537]
TBB03	1427	Cut	170/395	1427	N/A	N/A	17th-18th C	11	beam slot = [1538]
TBB03	1428	Fill	170/395	N/A	N/A	N/A	17th-18th C	11	fill of [1429] = [1475]
TBB03	1429	Cut	170/395	1429	N/A	N/A	17th-18th C	11	beam slot = [1475]
TBB03	1430	Fill	170/405	N/A	N/A	N/A	17th-18th C	11	fill of [1430]
TBB03	1431	Cut	170/405	1431	N/A	N/A	17th-18th C	11	beam slot
TBB03	1432	Fill	170/405	N/A	N/A	N/A	17th-18th C	11	fill of [1433]
TBB03	1433	Cut	170/405	1433	N/A	N/A	17th-18th C	11	beam slot
TBB03	1434	Timber	165/405	1453	N/A	N/A	17th-18th C	11	baseplate, structure [1453]
TBB03	1435	Timber	165/405	1453	N/A	N/A	17th-18th C	11	baseplate, structure [1453]
TBB03	1436	Timber	165/405	1453	N/A	N/A	17th-18th C	11	stake pinning [1435]
TBB03	1437	Timber	165/405	1453	N/A	N/A	17th-18th C	11	stake pinning [1435]
TBB03	1438	Timber	170/405	1453	N/A	N/A	17th-18th C	11	Post
TBB03	1439	Timber	170/405	1453	N/A	N/A	17th-18th C	11	post to east of [1435]
TBB03	1440	Timber	165-170/405	1453	N/A	N/A	17th-18th C	11	baseplate, structure [1453]
TBB03	1441	Timber	165/405	1453	N/A	N/A	17th-18th C	11	stake pinning [1440]
TBB03	1442	Timber	165/405	1453	N/A	N/A	17th-18th C	11	stake pinning [1440]
TBB03	1443	Timber	165/405	1453	N/A	N/A	17th-18th C	11	baseplate, structure [1453]
TBB03	1444	Timber	165-170/405	1453	N/A	N/A	17th-18th C	11	baseplate, structure [1453]
TBB03	1445	Timber	165/400	1453	N/A	N/A	17th-18th C	11	stake pinning [1444]
TBB03	1446	Timber	165/400	1453	N/A	N/A	17th-18th C	11	stake pinning [1444]
TBB03	1447	Timber	165-170/400	1453	N/A	N/A	17th-18th C	11	baseplate, structure [1453]
TBB03	1448	Timber	165/400	1453	N/A	N/A	17th-18th C	11	stake pinning [1447]
TBB03	1449	Timber	165/400	1453	N/A	N/A	17th-18th C	11	stake pinning [1447]
TBB03	1450	Timber	165-170/400	1453	N/A	N/A	17th-18th C	11	stake pinning [1447]
TBB03	1451	Timber	165/400	1453	N/A	N/A	17th-18th C	11	baseplate, structure [1453]
TBB03	1452	Timber	165/400	1453	N/A	N/A	17th-18th C	11	stake pinning [1451]
TBB03	1453	structure	160-170/400-405	1453	N/A	N/A	17th-18th C	11	base of tanning pits
TBB03	1454	Timber	165/400	1453	N/A	N/A	17th-18th C	11	baseplate, structure [1453]
TBB03	1455	Timber	165/400	1453	N/A	N/A	17th-18th C	11	stake pinning [1454]
TBB03	1456	Timber	165/400	1453	N/A	N/A	17th-18th C	11	stake pinning [1454]

TBB03	1457	Fill	160/400	N/A	N/A	N/A	17th-18th C	11	fill of [1458]
TBB03	1458	Cut	160/400	1458	N/A	N/A	17th-18th C	11	small pit
TBB03	1459	Fill	160/400	N/A	N/A	N/A	17th-18th C	11	fill of [1460]
TBB03	1460	Cut	160/400	1460	N/A	N/A	17th-18th C	11	Stakehole
TBB03	1461	Timber	165/400	1453	N/A	N/A	17th-18th C	11	post assoc with [1456]
TBB03	1462	Timber	165/400	1453	N/A	N/A	17th-18th C	11	post assoc with [1452]
TBB03	1463	Timber	170/405	1453	N/A	N/A	17th-18th C	11	post assoc with [1453]
TBB03	1464	Timber	170/405	1453	N/A	N/A	17th-18th C	11	post assoc with [1453]
TBB03	1465	Timber	170/400	1453	N/A	N/A	17th-18th C	11	post assoc with [1453] & beam slot [1425]
TBB03	1466	Timber	170/400	1453	N/A	N/A	17th-18th C	11	post assoc with [1453] & beam slot [1427]
TBB03	1467	Fill	175/395-400	N/A	N/A	N/A	15th-16th C	9	fill of [1468] = [1492]
TBB03	1468	Cut	175/395-400	1468	N/A	N/A	15th-16th C	9	beam slot = [1493]
TBB03	1469	Fill	175/400	N/A	N/A	N/A	15th-16th C	9	fill of [1470]
TBB03	1470	Cut	175/400	1470	N/A	N/A	15th-16th C	9	pit cut
TBB03	1471	Layer	170-175/400-405	1471	N/A	N/A	4th-16th C	8-9	waterlain layer
TBB03	1472	Fill	170/390-395	N/A	N/A	N/A	18th C	12	fill of lime-lined cut [1474]
TBB03	1473	Fill	170/390-395	N/A	N/A	3	18th C	12	lime-lining of [1474]
TBB03	1474	Cut	170/390-395	1474	N/A	N/A	18th C	12	lime-lined cut
TBB03	1475	Fill	175/400	N/A	N/A	1	17th-18th C	11	fill of [1476]
TBB03	1476	Cut	175/400	1476	N/A	N/A	17th-18th C	11	beam slot
TBB03	1477	Fill	165/400	N/A	N/A	2	18th C	12	industrial fill of [1478]
TBB03	1478	Cut	165/400	1478	N/A	N/A	18th C	12	industrial cut
TBB03	1479	Fill	170-175/390-395	N/A	N/A	N/A	18th C	12	fill of [1480]
TBB03	1480	Cut	170-175/390-395	1480	N/A	N/A	18th C	12	cut assoc with tanning
TBB03	1481	Fill	165-170/400-405	N/A	N/A	N/A	17th-18th C	11	backfill of [1453]
TBB03	1482	Fill	165/390-395	N/A	N/A	N/A	18th C	12	fill of [1483]
TBB03	1483	Cut	165/390-395	1483	N/A	N/A	18th C	12	sub ovoid pit
TBB03	1484	Fill	165/390-400	N/A	N/A	N/A	18th C	12	backfill of [1485]
TBB03	1485	Cut	165/390-400	1485	N/A	N/A	18th C	12	rectangular cut for housing tanning pits
TBB03	1486	Layer	165-170/395-400	1486	N/A	N/A	18th C	12	occ layer with industrial waste
TBB03	1487	Layer	165-170/395-400	1487	N/A	N/A	18th C	12	mortar floor
TBB03	1488	Fill	170/395	N/A	N/A	N/A	17th-18th C	11	fill of [1489] =[1546]
TBB03	1489	Cut	170/395	1489	N/A	N/A	17th-18th C	11	beam slot = [1547]

TBB03	1490	Fill	170/395	N/A	N/A	N/A	17th-18th C	11	fill of [1491] =[1544]
TBB03	1491	Cut	170/395	1491	N/A	N/A	17th-18th C	11	beam slot = [1545]
TBB03	1492	Fill	170/400	N/A	N/A	N/A	15th-16th C	9	fill of [1493] =[1467]
TBB03	1493	Cut	170/400	1493	N/A	N/A	15th-16th C	9	beam slot = [1468]
TBB03	1494	Fill	175/395	N/A	N/A	N/A	15th-16th C	9	fill of [1495]
TBB03	1495	Cut	175/395	1495	N/A	N/A	15th-16th C	9	Posthole
TBB03	1496	Fill	175/395	N/A	N/A	N/A	15th-16th C	9	fill of [1497] =[1568]
TBB03	1497	Cut	175/395	1497	N/A	N/A	15th-16th C	9	beam slot = [1569]
TBB03	1498	Fill	170/395	N/A	N/A	N/A	18th C	12	fill of [1499]
TBB03	1499	Cut	170/395	1499	N/A	N/A	18th C	12	pit cut
TBB03	1500	Fill	170/395	N/A	N/A	N/A	18th C	12	fill of [1501]
TBB03	1501	Cut	170/395	1499	N/A	N/A	18th C	12	Posthole
TBB03	1502	Fill	165/400	N/A	N/A	N/A	17th-18th C	11	fill of [1503]
TBB03	1503	Cut	165/400	1453	N/A	N/A	17th-18th C	11	Posthole
TBB03	1504	Fill	165/400	N/A	N/A	N/A	17th-18th C	11	fill of [1505]
TBB03	1505	Cut	165/400	1453	N/A	N/A	17th-18th C	11	Posthole
TBB03	1506	Fill	165/400	N/A	N/A	N/A	17th-18th C	11	fill of [1507]
TBB03	1507	Cut	165/400	1453	N/A	N/A	17th-18th C	11	Posthole
TBB03	1508	Fill(s)	165/395-400	N/A	5	N/A	18th C	12	fill of stakeholes
TBB03	1509	Cut(s)	165/395-400	1309	5	N/A	18th C	12	group stakeholes
TBB03	1510	Fill	165/390	N/A	N/A	N/A	18th C	12	fill of [1511]
TBB03	1511	Cut	165/390	1309	5	N/A	18th C	12	Stakehole
TBB03	1512	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of [1513]
TBB03	1513	Cut	165/395	1309	5	N/A	18th C	12	Stakehole
TBB03	1514	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of [1515]
TBB03	1515	Cut	165/395	1309	5	N/A	18th C	12	Stakehole
TBB03	1516	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of [1517]
TBB03	1517	Cut	165/395	1309	5	N/A	18th C	12	Stakehole
TBB03	1518	Fill	165/400	N/A	N/A	N/A	18th C	12	fill of [1519]
TBB03	1519	Cut	165/400	1309	5	N/A	18th C	12	Stakehole
TBB03	1520	Fill	165/390	N/A	N/A	N/A	18th C	12	fill of [1521]
TBB03	1521	Cut	165/390	1521	N/A	N/A	18th C	12	Stakehole
TBB03	1522	Fill	165/390	N/A	N/A	N/A	18th C	12	fill of [1523]

TBB03	1523	Cut	165/390	1521	N/A	N/A	18th C	12	Stakehole
TBB03	1524	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of [1525]
TBB03	1525	Cut	165/395	1525	N/A	N/A	18th C	12	Stakehole
TBB03	1526	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of [1527]
TBB03	1527	Cut	165/395	1525	N/A	N/A	18th C	12	Stakehole
TBB03	1528	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of [1529]
TBB03	1529	Cut	165/395	1525	N/A	N/A	18th C	12	Stakehole
TBB03	1530	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of [1531]
TBB03	1531	Cut	165/395	1525	N/A	N/A	18th C	12	Stakehole
TBB03	1532	Timber	175/400	N/A	N/A	N/A	17th-18th C	11	base of tanning pit
TBB03	1533	Fill	175/400	N/A	N/A	N/A	17th-18th C	11	backfill of [1534]
TBB03	1534	Cut	175/400	1534	N/A	N/A	17th-18th C	11	c/cut for tanning pit
TBB03	1535	Fill	175/400	N/A	N/A	N/A	17th-18th C	11	fill of [1536]
TBB03	1536	Cut	175/400	1536	N/A	N/A	17th-18th C	11	cut of beam slot
TBB03	1537	Fill	175/400	N/A	N/A	N/A	17th-18th C	11	fill of [1538]
TBB03	1538	Cut	175/400	1538	N/A	N/A	17th-18th C	11	cut of beam slot
TBB03	1539	Fill(s)	160-170/390-395	N/A	6	N/A	BA/IA/ Roman	4/7	group no of fills of channel [1565]
TBB03	1540	Fill	170/390-405	N/A	N/A	N/A	17th-18th C	11	primary fill of [1288]
TBB03	1541	Fill	160-165/390-400	N/A	N/A	N/A	18th C	12	primary fill of [1286]
TBB03	1542	Fill	170/395	N/A	N/A	N/A	18th C	12	fill of [1543]
TBB03	1543	Cut	170/395	1499	N/A	N/A	18th C	12	Posthole
TBB03	1544	Fill	175/395	N/A	N/A	N/A	17th-18th C	11	fill of [1545] = [1490]
TBB03	1545	Cut	175/395	1545	N/A	N/A	17th-18th C	11	cut of beam slot = [1491]
TBB03	1546	Fill	175/395	N/A	N/A	N/A	17th-18th C	11	fill of [1547] = [1488]
TBB03	1547	Cut	175/395	1547	N/A	N/A	17th-18th C	11	cut of beam slot = [1489]
TBB03	1548	Fill	165/395	N/A	N/A	N/A	18th C	12	fill of [1549]
TBB03	1549	Cut	165/395	1549	N/A	N/A	18th C	12	Stakehole
TBB03	1550	Fill	165/400	N/A	N/A	N/A	17th-18th C	11	fill of [1551]
TBB03	1551	Cut	165/400	1453	N/A	N/A	17th-18th C	11	Posthole
TBB03	1552	Timber	165/400	1453	N/A	N/A	17th-18th C	11	post in [1505]
TBB03	1553	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1554	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1555	Fill	160-170/390-395	N/A	6	N/A	Roman	7	fill of channel [1565]

TBB03	1556	Cut	160-170/390-395	1556	6	N/A	Roman	7			re-cut of channel [1572]
TBB03	1557	Layer	160/390-395	1557	6	N/A	IA	5			buried land surface with oxidisation
TBB03	1558	Fill	160-170/390-395	N/A	6	N/A	BA/IA	4			fill of channel [1572]
TBB03	1559	Fill	160-170/390-395	N/A	6	N/A	BA/IA	4			fill of channel [1572]
TBB03	1560	Fill	160-170/390-395	N/A	6	N/A	BA/IA	4			fill of channel [1572]
TBB03	1561	Fill	160-170/390-395	N/A	6	N/A	Roman	7			fill of channel [1565]
TBB03	1562	Fill	160-170/390-395	N/A	6	N/A	BA/IA	4			fill of channel [1572]
TBB03	1563	Fill	160-170/390-395	N/A	6	N/A	Roman	7			fill of channel [1565]
TBB03	1564	Fill	160-170/390-395	N/A	6	N/A	BA/IA	4			fill of channel [1572]
TBB03	1565	Cut	160-170/390-395	1565	6	N/A	Roman	7			re-cut of channel [1572]
TBB03	1566	Fill	160-170/390-395	N/A	6	N/A	Roman	7			fill of channel [1556]
TBB03	1567	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1568	Fill	170/395	N/A	N/A	N/A	15th-16th C	9			fill of [1569] = [1496]
TBB03	1569	Cut	170/395	N/A	N/A	N/A	15th-16th C	9			e-w linear = [1497]
TBB03	1570	Fill	170/405	N/A	N/A	N/A	17th-18th C	11			fill of [1571]
TBB03	1571	Cut	170/405	1571	N/A	N/A	17th-18th C	11			Posthole
TBB03	1572	Cut	160-170/390-395	1572	6	N/A		4			channel cut
TBB03	1573	Fill	160-170/390-395	N/A	6	N/A	Roman	7			fill of channel [1565]
TBB03	1574	Fill	160-170/390-395	N/A	6	N/A	BA/IA	4			fill of channel [1572]
TBB03	1575	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1576	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1577	Layer	170-175/395-405	1577	6	N/A	4th-15th C	8			waterlain layer
TBB03	1578	Fill	170/405	N/A	N/A	N/A	17th-18th C	11			fill of [1579]
TBB03	1579	Cut	170/405	1579	N/A	N/A	17th-18th C	11			Posthole
TBB03	1580	Fill	170/405	N/A	N/A	N/A	17th-18th C	11			fill of [1581]
TBB03	1581	Cut	170/405	1579	N/A	N/A	17th-18th C	11			Posthole
TBB03	1582	Layer	160/390-5	1582	6	N/A	IA	5			buried land surface with oxidisation
TBB03	1583	Timber	165/395	1153	N/A	N/A	18th C	12			side planks in tanning pit/linear cut [1286]
TBB03	1584	Layer	160/395-400	1584	N/A	N/A	IA	5			reworked natural sand
TBB03	1585	Layer	160-175/390-405	1585	1,6	N/A	Natural	1			natural sand = [1157]
TBB03	1586	Fill	165-170/400	N/A	N/A	N/A	Roman	7			fill of channel [1588]
TBB03	1587	Fill	165-170/400	N/A	N/A	N/A	Roman	7			fill of channel [1588]
TBB03	1588	Cut	165-170/400	1588	N/A	N/A	Roman	7			butt end of channel?

TBB03	1589	Fill	160/395	N/A	N/A	N/A	BA/IA	4	fill of [1590]
TBB03	1590	Cut	160/395	1590	N/A	N/A	BA/IA	4	Posthole
TBB03	1591	Fill	170-175/395-405	N/A	N/A	N/A	Neolithic	2	group fill no. for stakeholes [1592]
TBB03	1592	Cut	170-175/395-405	1585	N/A	N/A	Neolithic	2	stakeholes cutting [1585] in Area B
TBB03	1593	Layer	160-175/390-405	1585	N/A	N/A	Natural	1	natural gravel
TBB03	1594	Fill	175/390	N/A	N/A	N/A	19th C	14	fill of [1595]
TBB03	1595	Cut	175/390	1585	N/A	N/A	19th C	14	post-med cut unexcavated
TBB03	1596	Fill	175/395	N/A	N/A	N/A	BA/IA	4	fill of [1597]
TBB03	1597	Cut	175/395	1597	N/A	N/A	BA/IA	4	prehistoric ? cut
TBB03	1598	Layer	160/395-400	1598	N/A	N/A	Neo/BA	3	reworked natural sand
TBB03	1599	Fill	160/395-400	N/A	N/A	N/A	Neo/BA	3	group fills
TBB03	1600	Cut(s)	160/395-400	1598	N/A	N/A	Neo/BA	3	stakeholes cutting [1598]
TBB03	1601	Fill	160/390-5	N/A	N/A	N/A	Neolithic	2	group fill no. for stakeholes [1602]
TBB03	1602	Cut	160/390-5	1585	N/A	N/A	Neolithic	2	stakeholes cutting [1585] in Area A
TBB03	1603	Layer	165/390-400	N/A	N/A	N/A	18th C	12	trample layer at base of [1485]
TBB03	1604 - 1649: Not Used								
TBB03	1650	Fill	80/200	N/A	N/A	N/A	19th C	14	fill of timber lined pit [1652]
TBB03	1651	Timber	80/200	1652	N/A	N/A	19th C	14	timber lining [in [1652]
TBB03	1652	Cut	80/200	1652	N/A	N/A	19th C	14	cut for tanning pit
TBB03	1653	Fill	80/200-205	N/A	N/A	N/A	L19th-20thC	15	backfill of mod manhole [1655]
TBB03	1654	Fill	80/200-205	N/A	N/A	N/A	L19th-20thC	15	backfill of c/cut [1656]
TBB03	1655	Masonry	80/200-205	1655	N/A	N/A	L19th-20thC	15	Manhole
TBB03	1656	Cut	80/200-205	1656	N/A	N/A	L19th-20thC	15	c/cut for manhole
TBB03	1657	Fill	80/200-205	N/A	N/A	N/A	19th C	14	fill of modern drain cut [1658]
TBB03	1658	Cut	80/200-205	N/A	N/A	N/A	19th C	14	drain cut
TBB03	1659	Fill	80/200-205	N/A	N/A	N/A	19th C	14	fill of probably 19th century brick lined square tank [1661]
TBB03	1660	Fill	80/200-205	N/A	N/A	N/A	19th C	14	fill of c/cut [1662] for [1661]
TBB03	1661	Masonry	80/200-205	1661, 1700	N/A	N/A	19th C	14	brick lined pit
TBB03	1662	Cut	80/200-205	1662	N/A	N/A	19th C	14	c/cut for brick lined pit
TBB03	1663	Masonry	80/200-205	1663	N/A	N/A	18th-19th C	13	brick culvert
TBB03	1664	Cut	80/200-205	1664	N/A	N/A	18th-19th C	13	cut for [1663]
TBB03	1665	Fill	80/200-205	N/A	N/A	N/A	18th C	12	fill of large pit [1666]

TBB03	1666	Cut	80/200-205	1666	N/A	N/A	18th C	12		large pit containing bone waste and building material
TBB03	1667	Fill	85/200	N/A	N/A	N/A	19th C	14		fill of timber lined pit = [1650]
TBB03	1668	Masonry	90/195-200	1668	N/A	N/A	19th C	14		support for internal floor
TBB03	1669	Masonry	85/200	1669	N/A	N/A	19th C	14		support for internal floor
TBB03	1670	Masonry	85-90/200	1670?	N/A	N/A	19th C	14		wall associated with [1672], [1682] and floor supports [1668], [1669] & [1671]
TBB03	1671	Masonry	90/195-200	1671	N/A	N/A	18th-19th C	13		support for internal floor
TBB03	1672	Masonry	90/195-200	1672	N/A	N/A	18th-19th C	13		wall associated with [1670], [1682] and floor supports [1668], [1669] & [1671]
TBB03	1673	Masonry	85/200-205	1673	N/A	N/A	18th-19th C	13		wall, retained in later phases
TBB03	1674	Masonry	85/200	1674	N/A	N/A	19th C	14		foundation for floor abutting [1673]
TBB03	1675	Masonry	85/200	survey	N/A	N/A	L19th-20thC	15		L shaped wall
TBB03	1676	Masonry	85/205	survey	N/A	N/A	L19th-20thC	15		N-S wall same phase as [1675] deep foundations
TBB03	1677	Cut	85/195	1677	N/A	N/A	18th C	12		c/cut for well [1698]
TBB03	1678	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1679	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1680	Masonry	85/205?	1680	N/A	N/A	L19th-20thC	15		wall associated with [1776]
TBB03	1681	Masonry	90/195-200	1714	N/A	N/A	18th-19th C	13		wall same as [1714] & = [1682]
TBB03	1682	Masonry	90/200	1682	N/A	N/A	18th-19th C	13		wall = [1681] same build
TBB03	1683	Fill	80/200	N/A	N/A	N/A	19th C	14		fill of linear slot [1684]
TBB03	1684	Cut	80/200	1684	N/A	N/A	19th C	14		linear slot runs into [1686]
TBB03	1685	Fill	80/200	N/A	N/A	N/A	18th-19th C	13		backfill of ovoid cut [1687]
TBB03	1686	Cut	80/200	1686	N/A	N/A	18th-19th C	13		ovoid cut
TBB03	1687	Masonry	80/200	1686	N/A	N/A	18th-19th C	13		support for drain
TBB03	1688	Fill	80/200	N/A	N/A	N/A	19th C	14		fill of linear slot [1690]
TBB03	1689	Masonry	80/200	1684	N/A	N/A	19th C	14		brick lining of linear slot [1690]
TBB03	1690	Cut	80/200	1684	N/A	N/A	19th C	14		linear slot
TBB03	1691	Fill	80/200	N/A	N/A	N/A	18th-19th C	13		backfill of [1694]
TBB03	1692	Fill	80/200	N/A	N/A	50	18th-19th C	13		humic fill of [1694]
TBB03	1693	Fill	80/200	N/A	N/A	N/A	18th-19th C	13		primary fill of [1694]
TBB03	1694	Masonry	80/200	1694	N/A	N/A	18th-19th C	13		ovoid brick lined cess pit
TBB03	1695	Cut	80/200	1695	N/A	N/A	18th-19th C	13		cut for [1694]
TBB03	1696	Fill	80/200	N/A	N/A	N/A	18th-19th C	13		c/cut backfill of [1695]

TBB03	1697	Fill	85/195	N/A	N/A	N/A	18th-19th C	13	backfill of well [1698]
TBB03	1698	Masonry	85/195	1698	N/A	N/A	18th C	12	brick lined well
TBB03	1699	Fill	85/195	N/A	N/A	N/A	18th C	12	backfill of c/cut [1677]
TBB03	1700	Masonry	80/200-205	1661, 1700	N/A	N/A	19th C	14	tile base of square brick lined cut [1662]
TBB03	1701	Fill	80/200-205	N/A	N/A	N/A	18th-19th C	13	fill of drain [1663]
TBB03	1702	Masonry	85/195-200	surveyed	N/A	N/A	19th C	14	Rebuild of [1704]
TBB03	1703	Masonry	85/200	surveyed	N/A	N/A	L19th-20thC	15	wall from latest phase of industrial building
TBB03	1704	Masonry	85/195-200	1704	N/A	N/A	19th C	14	n-s wall of industrial building
TBB03	1705	Fill	90/200	N/A	N/A	N/A	19th C	14	backfill of c/cut [1706]
TBB03	1706	Cut	90/200	1706	N/A	N/A	19th C	14	c/cut for [1670]
TBB03	1707	Masonry	85/195-200	1707	N/A	N/A	19th C	14	brick structure
TBB03	1708	Masonry	85/200	1708	N/A	N/A	19th C	14	wall foundation
TBB03	1709	Masonry	85/200	surveyed	N/A	N/A	19th C	14	wall foundation
TBB03	1710	Fill	85/195-205	N/A	N/A	N/A	19th C	14	fill of c/cut for rebuild last phase [1711]
TBB03	1711	Cut	85/195-205	1711	N/A	N/A	19th C	14	c/cut for latest phase of building
TBB03	1712	Masonry	85/200-205	1711	N/A	N/A	19th C	14	cog or drive wheel
TBB03	1713	Masonry	85/195	1711	N/A	N/A	19th C	14	possibly part of cog or dive wheel
TBB03	1714	Masonry	90/195-200	1714	N/A	N/A	18th-19th C	13	same as [1681]
TBB03	1715	Fill	90/200		N/A	N/A	18th-19th C	13	backfill of c/cut [1716]
TBB03	1716	Cut	90/200	1716	N/A	N/A	18th-19th C	13	c/cut for walls [1671], [1672], [1681], [1682]
TBB03	1717	Fill	90/195-200	N/A	N/A	N/A	19th C	14	backfill of c/cut [1718]
TBB03	1718	Cut	90/195-200	1718	N/A	N/A	19th C	14	c/cut for wall [1668]
TBB03	1719	Masonry	85/200	1719	N/A	N/A	19th C	14	internal wall
TBB03	1720	Masonry	80/200-205	1720	N/A	N/A	19th C	14	primary floor surface of square brick lined pit [1662]
TBB03	1721	Fill	85/200	N/A	N/A	N/A	16th-17th C	10	fill of [1722]
TBB03	1722	Cut	85/200	1722	N/A	N/A	16th-17th C	10	square pit cut
TBB03	1723	Timber	90/200	N/A	N/A	N/A	18th C	12	decayed wood filling beam slot [1724]
TBB03	1724	Cut	90/200	1724	N/A	N/A	18th C	12	beam slot associated with [1761], [1763] and [1765]
TBB03	1725	Fill	85/200	N/A	N/A	N/A	16th-17th C	10	fill of posthole [1726]
TBB03	1726	Cut	85/200	1726	N/A	N/A	16th-17th C	10	Posthole
TBB03	1727	Fill	85/200	N/A	N/A	N/A	16th-17th C	10	fill of posthole [1728]
TBB03	1728	Cut	85/200	1726	N/A	N/A	16th-17th C	10	Posthole

TBB03	1729	Fill	85/200	N/A	N/A	N/A	16th-17th C	10	fill of stakehole [1730]
TBB03	1730	Cut	85/200	1726	N/A	N/A	16th-17th C	10	Stakehole
TBB03	1731	Fill	85/200	N/A	N/A	N/A	16th-17th C	10	fill of posthole [1732]
TBB03	1732	Cut	85/200	1726	N/A	N/A	16th-17th C	10	Posthole
TBB03	1733	Fill	85/200	N/A	N/A	N/A	16th-17th C	10	fill of posthole [1734]
TBB03	1734	Cut	85/200	1726	N/A	N/A	16th-17th C	10	Posthole
TBB03	1735	Fill	85/200	N/A	N/A	N/A	16th-17th C	10	fill of posthole [1736]
TBB03	1736	Cut	85/200	1726	N/A	N/A	16th-17th C	10	Posthole
TBB03	1737	Cut	85/205	1737	N/A	N/A	18th-19th C	13	c/cut for e/w wall truncated by robber cut [1740]
TBB03	1738	Masonry	85/205	1738	N/A	N/A	18th-19th C	13	e/w wall mostly robbed remains used as a buttress to [1675]
TBB03	1739	Fill	85/205	N/A	N/A	N/A	18th-19th C	13	b/fill of c/cut for wall [1738]
TBB03	1740	Cut	85/205	1740	N/A	N/A	18th-19th C	13	robber cut
TBB03	1741	Fill	85/205	N/A	N/A	N/A	18th-19th C	13	fill of robber cut [1740]
TBB03	1742	Fill	85/200	N/A	N/A	N/A	16th-17th C	10	fill of posthole [1743]
TBB03	1743	Cut	85/200	1726	N/A	N/A	16th-17th C	10	Posthole
TBB03	1744	Fill	80/200-205	N/A	N/A	N/A	18th C	12	primary fill of [1666]
TBB03	1745	Fill	90/200	N/A	N/A	N/A	16th-17th C	10	fill of stakehole [1746]
TBB03	1746	Cut	90/200	1746	N/A	N/A	16th-17th C	10	Stakehole
TBB03	1747	Layer	80/205	1747	N/A	N/A	17th-18th C	11	sandy silt bony layer = [1796] probably same as [1755]
TBB03	1748	Cut	80/205	1748	N/A	N/A	18th C	12	cut for culvert
TBB03	1749	structure	90/195-200	N/A	N/A	N/A	19th C	14	represents Vinegar factory floor
TBB03	1750	Masonry	80/205	1750	N/A	N/A	18th-19th C	13	e/wall on top of bony dump layers but fabric phase 1
TBB03	1751	Timber	85/200	1752	N/A	N/A	19th C	14	lining of pit = [1651]
TBB03	1752	Cut	85/200	1752	N/A	N/A	19th C	14	timber lined pit = [1652]
TBB03	1753	Fill	80/205	N/A	N/A	N/A	18th C	12	mixed fill of [1748]
TBB03	1754	Layer	80/200	1754	N/A	N/A	17th-18th C	11	cessy dump or occupation layer
TBB03	1755	Layer	80/200	1755	N/A	N/A	17th-18th C	11	sandy silt bony layer
TBB03	1756	Layer	80/200	1756	N/A	N/A	17th-18th C	11	occupation layer = [1755]
TBB03	1757	Fill	85/205	N/A	N/A	N/A	18th-19th C	13	fill of [1758]
TBB03	1758	Masonry	85/205	1758	N/A	N/A	18th-19th C	13	brick lining
TBB03	1759	Cut	85/205	1759	N/A	N/A	18th-19th C	13	cut for [1758] heavily truncated function unclear not a well though

TBB03	1760	Fill	90/200	N/A	N/A	N/A	18th C	12	fill of beam slot [1761]
TBB03	1761	Cut	90/200	1761	N/A	N/A	18th C	12	beam slot associated with [1724], [1763] and [1765]
TBB03	1762	Fill	90/200	N/A	N/A	N/A	18th C	12	fill of beam slot [1763]
TBB03	1763	Cut	90/200	1763	N/A	N/A	18th C	12	beam slot associated with [1724], [1761] and [1765]
TBB03	1764	Fill	90/200	N/A	N/A	N/A	18th C	12	fill of beam slot [1765]
TBB03	1765	Cut	90/200	1765	N/A	N/A	18th C	12	beam slot associated with [1724], [1761] and [1763]
TBB03	1766	Layer	80/200	1766	N/A	N/A	17th-18th C	11	charcoal layer = [1767]
TBB03	1767	Layer	80/200	1767	N/A	N/A	17th-18th C	11	charcoal layer = [1766]
TBB03	1768	Layer	80/195-200	1768	N/A	N/A	17th-18th C	11	occupation layer
TBB03	1769	Fill	85/200	N/A	N/A	N/A	18th C	12	fill of [1770]
TBB03	1770	Cut	85/200	1770	N/A	N/A	18th C	12	beam slot ?
TBB03	1771	Fill	85/200	N/A	N/A	N/A	18th C	12	fill of [1772]
TBB03	1772	Cut	85/200	1772	N/A	N/A	18th C	12	Posthole
TBB03	1773	Fill	85/200	N/A	N/A	N/A	18th C	12	fill of [1774]
TBB03	1774	Cut	85/200	1770	N/A	N/A	18th C	12	beam slot with possible post setting
TBB03	1775	Fill	85/205	N/A	N/A	N/A	18th C	12	fill of [1776]
TBB03	1776	Cut	85/205	1776	N/A	N/A	18th C	12	beam slot/post setting
TBB03	1777	Fill	85/200	N/A	N/A	N/A	16th-17th C	10	fill of [1778]
TBB03	1778	Cut	85/200	1778	N/A	N/A	16th-17th C	10	burnt out beam slot?
TBB03	1779	Layer	80/200	1779	N/A	N/A	17th-18th C	11	sandy silt bony layer = [1796] probably same as [1755] and [1747]
TBB03	1780	Fill	90/200	N/A	N/A	N/A	16th-17th C	10	fill of stakehole [1781]
TBB03	1781	Cut	90/200	1781	N/A	N/A	16th-17th C	10	Stakehole
TBB03	1782	Fill	90/200	N/A	N/A	N/A	16th-17th C	10	fill of stakehole [1783]
TBB03	1783	Cut	90/200	1746	N/A	N/A	16th-17th C	10	Stakehole
TBB03	1784	Fill	90/200	N/A	N/A	N/A	18th C	12	fill of [1785]
TBB03	1785	Cut	90/200	1785	N/A	N/A	18th C	12	small rectangular pit
TBB03	1786	Fill	90/200	N/A	N/A	N/A	16th-17th C	10	fill of stakehole [1787]
TBB03	1787	Cut	90/200	1787	N/A	N/A	16th-17th C	10	Stakehole
TBB03	1788	Fill	85/200	N/A	N/A	N/A	16th-17th C	10	fill of stakehole [1789]
TBB03	1789	Cut	85/200	1791	N/A	N/A	16th-17th C	10	Stakehole
TBB03	1790	Fill	85/200	N/A	N/A	N/A	16th-17th C	10	fill of stakehole [1791]

TBB03	1791	Cut	85/200	1791	N/A	N/A	16th-17th C	10	Stakehole
TBB03	1792	Fill	85/200	N/A	N/A	N/A	18th C	12	fill of [1793]
TBB03	1793	Cut	85/200	1793	N/A	N/A	18th C	12	beam slot
TBB03	1794	Fill	80/205	N/A	N/A	N/A	17th-18th C	11	fill of posthole [1795]
TBB03	1795	Cut	80/205	1795	N/A	N/A	17th-18th C	11	Posthole
TBB03	1796	Layer	80/205	1796	N/A	N/A	17th-18th C	11	surface containing high bone content
TBB03	1797	Layer	80/205	1797	N/A	N/A	17th-18th C	11	?surface layer mid grey white sandy silt
TBB03	1798	Fill	85/195	N/A	N/A	N/A	17th-18th C	11	fill of [1799]
TBB03	1799	Cut	85/195	1799	N/A	N/A	17th-18th C	11	Posthole
TBB03	1800	Fill	90/195	N/A	N/A	N/A	17th-18th C	11	fill of [1807]
TBB03	1801	Timber	85/200	1801	N/A	N/A	18th-19th C	13	possible base plate associated with wall [1673]
TBB03	1802	Cut	90/200	1802	N/A	N/A	18th C	12	cut for earliest phase building
TBB03	1803	Fill	85/200	N/A	N/A	N/A	16th-17th C	10	fill of [1804]
TBB03	1804	Cut	85/200	1804	N/A	N/A	16th-17th C	10	beam slot
TBB03	1805	Fill	90/200	N/A	N/A	N/A	17th-18th C	11	fill of [1806]
TBB03	1806	Cut	90/200	1806	N/A	N/A	17th-18th C	11	Posthole
TBB03	1807	Cut	90/195	1807	N/A	N/A	17th-18th C	11	Posthole
TBB03	1808	Fill	90/195	N/A	N/A	N/A	17th-18th C	11	fill of [1809]
TBB03	1809	Cut	90/195	1809	N/A	N/A	17th-18th C	11	Posthole
TBB03	1810	Layer	90/200	1810	N/A	N/A	18th C	12	levelling make up layer abutting beam [1762]
TBB03	1811	Fill	90/200	N/A	N/A	N/A	16th-17th C	10	fill of [1812]
TBB03	1812	Cut	90/200	1812	N/A	N/A	16th-17th C	10	Posthole
TBB03	1813	Layer	90/200	1813	N/A	N/A	18th C	12	levelling make up layer abutting beam [1762]
TBB03	1814	Fill	80/205	N/A	N/A	N/A	L19th-20thC	15	b/fill of culvert [1816]
TBB03	1815	Cut	80/205	N/A	N/A	N/A	18th-19th C	13	b/fill of c/cut [1817] for culvert
TBB03	1816	Masonry	80/205	1816	N/A	N/A	18th-19th C	13	Culvert
TBB03	1817	Cut	80/205	1817	N/A	N/A	18th-19th C	13	cut for culvert
TBB03	1818	Layer	85/205	N/A	30	N/A	L19th-20thC	15	building rubble
TBB03	1819	Layer	85/205	N/A	30	N/A	19th C	14	mortar floor surface
TBB03	1820	Layer	85/205	N/A	30	N/A	19th C	14	floor surface
TBB03	1821	Layer	85/205	N/A	30	N/A	18th-19th C	13	occupation layer
TBB03	1822	Layer	85/205	N/A	30	N/A	18th-19th C	13	levelling layer
TBB03	1823	Fill	85/195-205	1826	30	55	15th-16th C	9	top fill of ditch [1826]

TBB03	1824	Fill	85/195-205	N/A	30	N/A	15th-16th C	9	charcoal rich fill of ditch [1826]
TBB03	1825	Fill	85/195-205	1826	30	62	15th-16th C	9	primary fill of ditch [1826]
TBB03	1826	Cut	85/195-205	1826	30	N/A	15th-16th C	9	n-s ditch cut runs across previous excavated areas
TBB03	1827	Fill	85/205	N/A	30	N/A	18th-19th C	13	b/fill of c/cut [1828]
TBB03	1828	Cut	85/205	N/A	30	N/A	18th-19th C	13	c/cut for wall [1673]
TBB03	1829	Layer	80/195-200	1829	N/A	N/A	17th-18th C	11	charcoal rich layer
TBB03	1830	Layer	80-85/195-200	1830	N/A	53	17th-18th C	11	occupation layer
TBB03	1831	Layer	80/200	1831	N/A	N/A	17th-18th C	11	occupation layer = [1830]
TBB03	1832	Layer	85/195-200	N/A	N/A	N/A	17th-18th C	11	dump/occupation layer
TBB03	1833	Layer	85/195	N/A	N/A	N/A	17th-18th C	11	mortar floor surface poss contemporary to [1842]
TBB03	1834	Layer	80-85/195-200	1834	N/A	N/A	17th-18th C	11	bony sandy silt occupation layer
TBB03	1835	Layer	80/195-200	1835	N/A	54	17th-18th C	11	occupation layer
TBB03	1836	Layer	80/205	1836	N/A	N/A	17th-18th C	11	working surface layer = [1797]
TBB03	1837	Layer	80/205	1837	N/A	51	17th-18th C	11	bony sandy silt occupation layer
TBB03	1838	Layer	80/205	1838	N/A	52	17th-18th C	11	whitish grey sandy silt working surface = [1839] and [1841]
TBB03	1839	Layer	80/200-205	1839	N/A	N/A	17th-18th C	11	whitish grey sandy silt working surface = [1838] and [1841]
TBB03	1840	Layer	85/200	1840	N/A	N/A	17th-18th C	11	mortar surface
TBB03	1841	Layer	80/200	1841	N/A	N/A	17th-18th C	11	whitish grey sandy silt working surface = [1839] and [1840]
TBB03	1842	Layer	80/200	1842	N/A	N/A	17th-18th C	11	mortar surface = [1840]
TBB03	1843	Fill	80/200	N/A	N/A	N/A	17th-18th C	11	fill of posthole [1844]
TBB03	1844	Cut	80/200	1844	N/A	N/A	17th-18th C	11	Posthole
TBB03	1845	Layer	85/200	N/A	N/A	N/A	17th-18th C	11	sandy mortar layer
TBB03	1846	Layer	85/200	1846	N/A	N/A	17th-18th C	11	bony sandy silt levelling layer
TBB03	1847	Layer	85/200	N/A	N/A	N/A	17th-18th C	11	waterlain/silting deposit infilling over top of slot [1850]
TBB03	1848	Layer	85/200	N/A	N/A	N/A	17th-18th C	11	ashy sand spread washed in? over slumped in slot
TBB03	1849	Layer	85/200	1849	N/A	N/A	17th-18th C	11	silty clay washed in? over slumped in slot
TBB03	1850	Cut	85/200	1850	N/A	N/A	17th-18th C	11	e/w slot
TBB03	1851	Fill	85/200	N/A	N/A	N/A	19th C	14	b/fill of c/cut for timber lined [1752]
TBB03	1852	Fill	80/200	N/A	N/A	N/A	17th-18th C	11	fill of posthole [1853]
TBB03	1853	Cut	80/200	1853	N/A	N/A	17th-18th C	11	Posthole

TBB03	1854	Fill	80/195-200	N/A	N/A	64	17th-18th C	11	fill of n-s slot [1855]
TBB03	1855	Cut	80/195-200	1854	N/A	N/A	17th-18th C	11	n-s slot
TBB03	1856	Layer	80/200	N/A	N/A	N/A	17th-18th C	11	waterlain/silting deposit infilling over top of slot [1850]
TBB03	1857	Fill	80/200	N/A	N/A	N/A	17th-18th C	11	fill of posthole [1858]
TBB03	1858	Cut	80/200	N/A	N/A	N/A	17th-18th C	11	Posthole
TBB03	1859	Layer	80/205	1859	N/A	56	17th-18th C	11	bony sandy silt layer = [1861] and [1860]
TBB03	1860	Layer	80/200-205	1860	N/A	N/A	17th-18th C	11	bony sandy silt layer = [1859] and [1861]
TBB03	1861	Layer	80/200	1861	N/A	N/A	17th-18th C	11	bony sandy silt layer = [1859] and [1860]
TBB03	1862	Layer	80/195-200	1862	N/A	N/A	17th-18th C	11	waterlain/silting deposit over top of slot [1850] = [1863]
TBB03	1863	Layer	85/195-200	1863	N/A	N/A	17th-18th C	11	waterlain/silting deposit over top of slot [1850] = [1862]
TBB03	1864	Fill	80-85/200	N/A	N/A	58	17th-18th C	11	primary fill of linear slot [1850] = [1866]
TBB03	1865	Fill	80-85/200	N/A	N/A	N/A	17th-18th C	11	fill of [1850]
TBB03	1866	Fill	80-85/200	N/A	N/A	63	17th-18th C	11	primary fill of [1850] = [1864]
TBB03	1867	Fill	80/200	N/A	N/A	61	17th-18th C	11	fill of [1870]
TBB03	1868	Fill	80/200	N/A	N/A	N/A	17th-18th C	11	fill of [1870]
TBB03	1869	Fill	80/200	N/A	N/A	N/A	17th-18th C	11	waterlain/silting fill of slot [1870]
TBB03	1870	Cut	80-85/200	1870	N/A	N/A	17th-18th C	11	linear slot
TBB03	1871	Layer	85/195-200	1871	N/A	N/A	17th-18th C	11	chalky mortary sand
TBB03	1872	Fill	85/200	N/A	N/A	N/A	17th-18th C	11	fill of [1873]
TBB03	1873	Cut	85/200	1872	N/A	N/A	17th-18th C	11	natural slot caused by water action
TBB03	1874	Fill	85/195	N/A	N/A	59	17th-18th C	11	fill of e-w slot [1875]
TBB03	1875	Cut	85/195	1875	N/A	N/A	17th-18th C	11	e/w slot
TBB03	1876	Fill	80/200	N/A	N/A	N/A	17th-18th C	11	fill of [1870]
TBB03	1877	Fill	80/200	N/A	N/A	60	17th-18th C	11	waterlain fill of [1870]
TBB03	1878	Layer	80-85/195-200	1878	N/A	N/A	4th-15th C	8	alluvial layer
TBB03	1879	Fill	80/200-205		N/A	N/A	17th-18th C	11	rotted timber in slot [1880]
TBB03	1880	Cut	80/200-205	1880	N/A	N/A	17th-18th C	11	n/s slot
TBB03	1881	Fill	80/200	N/A	N/A	N/A	17th-18th C	11	fill of [1882]
TBB03	1882	Cut	80/200	1882	N/A	N/A	17th-18th C	11	Posthole
TBB03	1883	Fill	80/205	N/A	N/A	N/A	17th-18th C	11	fill of [1884]
TBB03	1884	Cut	80/205	1884	N/A	N/A	17th-18th C	11	pit cut
TBB03	1885	Fill	80/205	N/A	N/A	N/A	17th-18th C	11	fill of [1886]

TBB03	1886	Cut	80/205	1886	N/A	N/A	17th-18th C	11		pit cut		
TBB03	1887	Fill	80/205	N/A	N/A	N/A	17th-18th C	11		fill of [1888]		
TBB03	1888	Cut	80/205	1888	N/A	N/A	17th-18th C	11		pit cut		
TBB03	1889	Layer	80/205	1889	N/A	N/A	16th-17th C	10		dump layer		
TBB03	1890	Fill	80/195	N/A	N/A	N/A	17th-18th C	11		fill of [1891]		
TBB03	1891	Cut	80/195	1891	N/A	N/A	17th-18th C	11		Posthole		
TBB03	1892	Fill	80/200	N/A	N/A	N/A	17th-18th C	11		fill of [1893]		
TBB03	1893	Cut	80/200	1893	N/A	N/A	17th-18th C	11		Posthole		
TBB03	1894	Fill	80/205	N/A	31	N/A	17th-18th C	11		top fill of slot [1895]		
TBB03	1895	Cut	80/205	1895	31	N/A	17th-18th C	11		e/w slot		
TBB03	1896	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A
TBB03	1897	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A
TBB03	1898	Fill	80/205	N/A	31	N/A	17th-18th C	11		top fill of slot [1902]		
TBB03	1899	Fill	80/205	1899	31	65	17th-18th C	11		Fill of slot [1902]		
TBB03	1900	Fill	80/205	N/A	N/A	N/A	17th-18th C	11		rotted timber in slot [1902]		
TBB03	1901	Fill	80/205	N/A	N/A	N/A	17th-18th C	11		primary fill in slot [1902]		
TBB03	1902	Cut	80/205	1902	N/A	N/A	17th-18th C	11		e/w slot		
TBB03	1903	Fill	80/205	N/A	31	N/A	17th-18th C	11		primary fill in slot [1895]		
TBB03	1904	Fill	80/200	N/A	N/A	N/A	17th-18th C	11		fill of [1905]		
TBB03	1905	Cut	80/200	1893	N/A	N/A	17th-18th C	11		Posthole		
TBB03	1906	Fill	85/200	N/A	N/A	N/A	15th-16th C	9		fill of [1907]		
TBB03	1907	Cut	85/200	1907	N/A	N/A	15th-16th C	9		Posthole		
TBB03	1908	Fill	85/200	N/A	N/A	N/A	16th-17th C	10		fill of [1909]		
TBB03	1909	Cut	85/200	1909	N/A	N/A	16th-17th C	10		Stakehole		
TBB03	1910	Fill	85/200	N/A	N/A	N/A	16th-17th C	10		fill of [1911]		
TBB03	1911	Cut	85/200	1909	N/A	N/A	16th-17th C	10		Stakehole		
TBB03	1912	Fill	85/200	N/A	N/A	N/A	16th-17th C	10		fill of [1913]		
TBB03	1913	Cut	85/200	1913	N/A	N/A	16th-17th C	10		Stakehole		
TBB03	1914	Fill	85/200	N/A	N/A	N/A	16th-17th C	10		fill of [1915]		
TBB03	1915	Cut	85/200	1913	N/A	N/A	16th-17th C	10		Stakehole		
TBB03	1916	Fill	85/200	N/A	N/A	N/A	16th-17th C	10		fill of [1917]		
TBB03	1917	Cut	85/200	1913	N/A	N/A	16th-17th C	10		Stakehole		
TBB03	1918	Layer	85-95/195-205	1918	N/A	N/A	4th-15th C	8		waterlain sandy layer		

TBB03	1919	Fill	90/200	N/A	N/A	66	15th-16th C	9		fill of linear ditch [1920]
TBB03	1920	Cut	90/200	1920	N/A	N/A	15th-16th C	9		linear ditch
TBB03	1921	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1922	Void	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TBB03	1923	Fill	90/195-200	N/A	N/A	N/A	15th-16th C	9		fill of [1924]
TBB03	1924	Cut	90/195-200	1924	N/A	N/A	15th-16th C	9		pit cut or possibly the butt end of ditch
TBB03	1925	Layer	80-85/195-205	N/A	N/A	N/A	4th-15th C	8		waterlain sandy layer
TBB03	1926	Layer	80/200-205	1926	N/A	N/A	Neo/BA	3		waterlain sandy layer
TBB03	1927	Layer	80-85/200	1927	N/A	N/A	4th-15th C	8		waterlain sandy layer
TBB03	1928	natural	all squares	N/A	N/A	N/A	Natural	1		natural sand
TBB03	1929	Fill	80/195-200	N/A	N/A	N/A	Neo/BA	3		fill of [1930]
TBB03	1930	Cut	80/195-200	1930	N/A	N/A	Neo/BA	3		natural feature caused by water action-a solution hole

APPENDIX 2

LITHIC ASSESSMENT

Barry John Bishop

INTRODUCTION

A rolling programme of archaeological investigations at 169 Tower Bridge Road resulted in the recovery of 662 struck flints. This report assesses those recovered during all phases of the investigations and considers the material as a single assemblage. It quantifies and describes the material, assesses its significance and recommends any further work required for it to achieve its full research potential. A full catalogue of the assemblage plus detailed descriptions of retouched implements and cores is provided in the Appendix to this report.

The bulk of the struck flint, some 85%, was recovered from a series of sandy layers overlying natural deposits that had survived across much of the site. The assemblages from these were clearly chronologically mixed and had been deposited over a long period. Small quantities of struck flint were also recovered from a few of the prehistoric features identified at the site, and the remainder was present within Roman and later contexts, much of this being residually deposited. Of some interest was the struck flint recovered from a few Post-Medieval contexts that may have been associated with the tanning industry.

QUANTIFICATION

Context	Cortical Flake	Rejuvenation flake	Trimming Flakes (<15mm dimension.)	TASF	Flake	Undiag Flake Fragment	Cortical Blade	Blade	Blade-like flake	Core	Retouched	Utilized	Tested Cobble	Conchoidal shatter	Shattered pebble	Context Total	Hammerstone
Total	73	4	21	1	165	33	8	42	40	44	40	3	15	113	60	662	3
%	11.0	0.6	3.2	0.2	24.9	5.0	1.2	6.3	6.0	6.6	6.0	0.5	2.3	17.1	9.1	100	

Table 1: Quantification of Struck Flint

RAW MATERIALS

All of the struck pieces were made from flint. The raw materials used overwhelmingly consisted of smooth-worn or battered (chattermarked) pebbles and cobbles of a variety of colours, textures and flaking qualities, reflecting the composition of the local Gravel Terraces from where they would have been obtained. Fine-grained translucent/mottled black, brown, grey and orange flint was mostly used along with, in lesser quantities, varieties of coarse-grained 'sugary' textured grey, brown, orange and yellow cherty flints and occasional fine-grained flint from the "Bullhead Beds" (Shepherd 1972). A few pieces did retain relatively fresh looking cortex suggesting the

possibility that some raw materials were imported to the site, these perhaps being obtained from relatively unweathered deposits located closer to the chalk and obtainable via tributary rivers linking the chalklands of the North Downs to the central Thames Valley.

The cobbles and pebbles that were used were mostly small in size; few flakes exceeded 50mm in maximum dimension and the minimally modified cores varied in weight from 33g to 121g, averaging at only 64g. The flaking quality of the flint was compromised by the small size of the pebbles and cobbles used, their frequent thermal flaking and the often-substantial proportions of crystalline pockets and other inclusions present.

There were no strict chronological preferences apparent in the types of flint used with all types apparently being used during all periods. Nevertheless, pieces considered earlier, such as the blades, were more likely to be made from the better, finer-grained, flint and the “bullhead bed” flint. Although there was no exclusivity in the types of flint used, it does appear that that greater care may have been taken during the earlier periods in the selection of more reliable flint types. Even though some of the better made pieces from the earlier periods of flintworking may have been imported to the site, attempts were nevertheless made at systematic blade production using the locally available raw materials and, despite the deficiencies of these, the skills of the knappers resulted in many useful pieces being made. During later periods, a greater reliance was placed upon poorer quality raw materials but the expediency inherent in these later industries meant that these plentiful and easily obtainable materials were adequate for the purpose.

CONDITION

The condition of the assemblage as a whole was variable. The majority of it, which derived from the sand horizons, was in good and often sharp condition whilst the redeposited material was frequently edge chipped and abraded, although this was rarely extensive. Some pieces from the sand horizons also exhibited minor edge chipping and rubbing, consistent with a limited degree of trampling as well as settling within the sandy burial matrix. Not surprisingly, the redeposited material from Post-Medieval contexts tended to be noticeably more battered than those pieces from earlier contexts.

Recortication was noted on a small proportion of pieces and this appears to be limited to some, but certainly not all, of the earlier pieces, such as the transverse axe sharpening flake, the truncated blade and the microlith, as well as some of the systematically produced blades.

CHARACTERIZATION

The assemblage may be regarded as moderately large given the size of the areas investigated. Considerations of both the technological and typological attributes of the assemblage indicate that that it was manufactured over a long period, from at least the Mesolithic to the Bronze Age, with the added possibility that a form of flint use occurred at the site during the Post-Medieval period. It contained pieces representing all stages in the reduction sequence, from rejected 'tested' pieces and decortication flakes, to used and worn-out tools (see Appendix). It was evident that flint raw materials were procured and converted to tools and those were being used and discarded at the site, although different emphasis may have been placed on particular stages of this process during the various periods of occupation.

DATING, AFFINITIES AND REDUCTION STRATEGIES

Early Flintworking?

A small collection of flakes recovered from the sand horizons is worthy of comment. These were all heavily recorticated, to a much greater degree than that seen on some of the blades etc (see above), and they were also noticeably more chipped and abraded than any of the other struck flints from the sand horizons, to the degree that they may have been subjected to alluvial processes. As a group, their condition and the extent of their recortication made them stand out from any of the other pieces recovered at the site. Unfortunately, they were technologically unremarkable and difficult to assign dates to, but their condition gave them the appearance of being older than the other pieces at the site and the possibility must be considered that they could have been dropped by earlier groups, possibly even before the sand dunes that formed the islands had fully stabilized.

Mesolithic/Early Neolithic

The earliest confidently dateable pieces can be attributed to the Mesolithic period. A reasonably large proportion of the assemblage, nearly 15%, consisted of blades and other flakes showing blade-like traits, such as parallel lateral margins and dorsal scars. Although blade production continued into the Early Neolithic, many of the examples here, being systematically produced with many micro-blades present, were perhaps most likely to date to the Mesolithic period.

Implements characteristic of Mesolithic industries included a microlith from feature [651] and a transverse-axe sharpening flake that had been removed from a finely worked implement at least 38mm wide, recovered from context [584, 102/201]. Transverse axes have been commonly found along the lower Thames Valley, many having been dredged from the river itself (Field 1989). No excavated examples from north Southwark are known but other sharpening flakes have been recorded at a number of locations in this area (eg Sidell *et al.* 2002, 18-19). Interestingly, a number of bifacial thinning flakes were also identified, and these may suggest that axes were

actually being manufactured at the site, not just being sharpened. Also typically Mesolithic was a truncated blade from context [584, 107/22]. This had an obliquely truncated distal end with utilization traces along its lateral margins.

It is possibly of significance that the three diagnostically Mesolithic implements, the microlith, the transverse-axe sharpening flake and the truncated blade, were all recorticated and made from a superior fine-grained flint that may have been imported into the area. Around 20 other pieces from the site also shared these characteristics and these included a number of blades and blade-like flakes, which could also be easily placed within Mesolithic assemblages. The only core that showed evidence of recortication consisted of a large and thick primary flake recovered from context [1582]. This had a number of blades removed from one edge, leaving a small semi-circular striking platform. It resembled the pseudo-burin type cores of Mesolithic date (Wymer 1962, 346; Jacobi *et al.* 1978, 217-218) and it is possible that these were primarily designed to be used as graving tools.

It is tempting to suggest that the majority of blades, blade-like flakes and blade cores, which remained unrecorticated, belong to a slightly later phase than the recorticated material, perhaps being Early Neolithic in date. However, there were no typological or technological grounds for doing so; as using recortication as a chronological indicator is fraught with difficulties (eg Smaltz 1960) they can only be confidently assigned broadly to the Mesolithic or Early Neolithic periods. Four definite or probable blade cores were present amongst these. They had all been extensively reduced but had produced blades at some stage during their productive life. They were all reduced using a similar strategy whereby rounded pebbles of local but good quality flint were selected and a striking platform formed by simply removing one or two flakes. This was then used to further remove a series of blades and narrow flakes. Striking platforms were trimmed to enable greater control over reduction and a few core rejuvenation flakes were also recovered, indicating some concern with core maintenance, although generally the raw materials were too small and thermally flawed to allow this type of core manipulation to be routinely practiced. Further retouched pieces of Mesolithic or Early Neolithic date included a number of utilized and lightly edge-trimmed blades, a serrated blade, a long-end scraper and two piercers made by accentuating the distal ends of blades. Some of the scrapers may also belong to this period although they are mostly not closely dateable.

Later Neolithic/Early Bronze Age

Later Neolithic flintwork was represented by a chisel type transverse arrowhead, dateable to c.3250-2500 cal BC (Green 1980; 1984, 19). Transverse arrowheads are relatively rare within the London region although a few have been found in north Southwark (eg Bishop 1996; Proctor and

Bishop 2002). In general, they are often associated with ritual or ceremonial activities, particularly with Grooved ware or Peterborough ware sites (Green 1980 235-6). Other pieces that may belong to the Later Neolithic or Early Bronze Age include a number of carefully made symmetrical scrapers (eg from context [1090, 110/204]) and an elaborate piercer, made by extensively narrowing a large flake, recovered from context [1083, 119/204]. Some of the scrapers from context [584] (eg squares 107/209, 106/220, 103/208) were comparable to 'thumbnail' types and, although they were not strictly diagnostic, were most comparable to Later Neolithic or Early Bronze Age types. Some of the more formally reduced flake cores may also belong to this phase, and these include two, from contexts [584, 107/216] and [1060], that may have made use of the Levallois technique, one of which was found alongside the transverse arrowhead.

Middle Bronze Age to Iron Age

Probably contributing the largest proportion of the assemblage was worked flint of Middle Bronze Age or later characteristics. The basic technological strategy pursued during that period consisted of the opportunistic and unstructured working of easily acquired raw materials until sufficient numbers of flakes were obtained. Pieces that were likely to belong to this phase of activity include a proportion of the flakes, many of which were short, thick, and had wide obtuse striking platforms, and the randomly reduced and minimally worked cores, some of which may actually represent core tools.

Cores typical of this period were common within the assemblage. Their frequency is partially a factor of the reduction strategies employed; cores were only reduced until sufficient suitable flakes were produced for specific tasks, resulting in many being discarded with only a few flakes removed. Although very expedient, some patterns may be observed amongst those with longer reduction sequences. Several elongated cobbles had been worked by burrowing from one end towards the other. Another method involved the selection of cobbles with thermal facets and using these to detach a handful of flakes. Sometimes the resultant flaked core-face would then be used as a platform to remove a second series, resulting in bifacially reduced chopper-like cores that may have actually been intended for that purpose. Indeed, it is possible that many of the irregular cores were reduced primarily to function as core tools. As well as possible 'chopping' uses, some of the cores have small series of flakes removed along one edge and resemble scraper-type tools; others had heavily indented striking platforms and may have represented heavy-duty denticulated tools.

Few formal retouched implements dateable to this period were present, reflecting the opportunistic use of suitable working edges, and those that were consisted mostly of scrapers made on irregular flakes as well as thermal spalls exhibiting irregular retouch (eg contexts [1060],

[1082] or [1090, 113/202]). It is not possible to chronologically further refine flintwork of the late second and first millennia BC although it certainly could be contemporary with the Late Bronze Age pottery and other evidence of activity recorded at the site.

Historic Flintworking?

As well as the prehistoric use of flint at the site, there are some indications that, on a few rare occasions, flint was also worked during later periods. Perhaps the best evidence for this was a small collection of worked flints that were recovered from tanning pit [437]. These were all in sharp condition and made from a single, large and relatively unweathered nodule of mottled translucent black and opaque grey flint that was quite distinctive from the raw materials used to produce the prehistoric struck flint assemblages. The collection consisted of a large part of the nodule that had been extensively, if rather randomly, flaked and then used as a pounder, two conchoidal chunks and a flake, all of which also showed evidence of battering. The nodule had clearly been used for pounding and also exhibited polished patches from extensive rubbing, whilst the other pieces had abraded edges, possibly having been used for heavy-duty cutting or scraping type tasks. Neither the raw materials nor their wear marks had any clear parallels amongst the prehistoric flintwork and the presence of such similar materials within the tanning pit support the suggestion that they were associated with it. Their potential role in the tanning process remains elusive but it is worth noting that both flint pounders and scrapers are routinely associated with hide processing during the prehistoric periods. Close-by, tanning pit [394] produced three large nodules of similar flint to that from pit [437], these weighing between 500g and 1000g. They also showed traces of simple flaking as well as battering which, again, could not be matched with any of the prehistoric material. As these three distinctive pieces were from one pit fill, it does seem likely that they were associated with it and, again, some use within the tanning industry does seem plausible.

In this context it is worth mentioning a cortical flake recovered from tanning pit [929] that measured 88mm by 126mm, by far the largest flake recovered at the site, as well as four smaller cortical flakes from layer [1796]/[1797] which were of similar raw materials and in a similar condition to the pieces from pits [394] and [437]. These flakes show that nodules were being dressed in the vicinity; it is possible that this was for flint masonry construction, which was not uncommonly practiced in Southwark, although the recurrent association of this material with the tanning industry recorded here may indicate an hitherto unrecorded and still poorly understood use of flint within the tanning process.

DISTRIBUTION AND CONTEXT

The worked flint primary relates to the prehistoric occupation at the site, the majority of pieces, over three-quarters, being recovered from the sandy soils and sub-soils that would have originally covered the site. A small proportion originate from features that may date to the prehistoric period, with the remainder coming from Roman or later soils, probably reworked prehistoric alluvial deposits, or from similarly dated features where they were presumably residually deposited. A small collection found in association with tanning pits may actually be Post-Medieval in date and relate to processes connected to the pits.

The distribution, with most of the material originating from soil horizons, suggests that much of the struck flint that was made and used at the site and was discarded on to the surface or within subsequently ploughed-out shallow features, with only a very minor amount directly relating to the features from which they were recovered.

SIGNIFICANCE

Human activity at the site probably commenced shortly after the islands stabilized during the early Holocene and continued from thereon, although intermittent rising river levels and continued alluviation resulted in much of the lower lying areas being progressively abandoned. The assemblage represents a variety of flint using activities and is an important addition to the growing body of evidence for prehistoric activity, from the Mesolithic to the end of the Bronze Age, in north Southwark. Other lithic assemblages from comparable contexts have been recovered from the many archaeological investigations in the vicinity, although this is one of the largest individual assemblages so far examined from within this low-lying landscape. A rarely documented period of flint use during the Post-Medieval period has also been identified.

For all of the periods represented, the struck flint has the potential to inform on the chronology of activity at the site, the nature of the occupations and the relationship between the struck flint and the prehistoric features recorded, the range of activities undertaken, the technological approaches taken in working and using flint and, by considerations of the numerous assemblages recovered in the vicinity, the role that the site played within the broader context of occupation on the north Southwark islands.

RECOMMENDATIONS

This report is based on a preliminary examination and quantification of the lithic material recovered during the various phases of investigations at the site. It has identified four periods when flint use was significant, the Mesolithic/Early Neolithic, the Later Neolithic, the later Bronze Age and the Post-Medieval period, and the assemblage has the potential to further contribute to

increased understanding of the nature of occupation, in particular during the prehistoric periods. In order for this potential to be fully realized, further work is recommended with the broad aims of:

- identifying and establishing more precisely the chronology of flint use at the site
- establishing in detail the typological/technological signatures of the material from the different periods in order to understand the various ways in which flint was used at the site
- establishing the range of activities conducted during different periods
- establishing the range of products that may have been manufactured and assessing the evidence in the form of debitage for the manufacture of implements that may have been subsequently removed from the site
- through spatial analysis: identifying chronological differences in the areas chosen for lithic-based activities, demarcate specific-activity areas, examine how flintworking was organized spatially and examine how this related to the contemporary features that were identified
- examining the implications of what was made and how it was used
- establishing the relationship between raw material acquisition, flint production, use and discard
- discussing how the material compares and contrasts to other lithic assemblages from the region and the implications that this may have for broader settlement strategies and patterns of landscape exploitation

In order to fulfil these aims, further work should concentrate on undertaking a full and detailed re-examination, cataloguing and technological analyses of the assemblage combined with spatial analysis of various categories of struck flint, and a comparison of the typological/technological characteristics of other similarly dated assemblages from the region. Following completion of this work, it is recommended that the findings are fully written up and, alongside illustrations of the most relevant pieces, presented in any published account of the fieldwork.

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Appendix: Lithic Catalogue

Catalogue: Struck Flint by Context

Context	Square	Cortical Flake	Rejuvenation flake	Trimming Flake	TASF	Flake	Undiag Flake Fragment	Cortical Blade	Blade	Blade-like flake	Core	Retouched	Utilized	Tested Cobble	Conchoidal shatter	Shattered pebble	Context Total	Hammerstone	Burnt Struck	Recort	Comments
+	108/208	1				4				1					2	3	11				
+	115/200	1				1	1					1					4				
+	170/407	1				1				1							3				
028						1											1				
040		1		1													2				
087															1		1				
087						1	1					1					3				
097																	0				?gunflint – very sharp
100		1		1					2								4				Same RM?
101														1			1				97g
264						1											1				Poss strike-a-light???
435												1			2		3	1			PMed flint use???
462						1											1				
466						1											1				
467						1										1	2				Poss a scraper
512									1								1			1/1	
554															1		1				
584	-					1				1						1	3				
584	100/209					1			1	1							3				
584	100/210													1			1				60g
584	100/213					1											1			1/1	
584	100/214					1				1	1						3				
584	100/215					2											2				Flake = 63X50X18
584	100/216	1				1						1		1	1		5				60g
584	100/217						1										1				
584	100/217	1															1				
584	100/218														1		1			1/1	
584	101/114	1														1	2				
584	101/114	1				1											2				
584	101/204						1								1		2				
584	101/208						1					1					2			½	

Context	Square	Cortical Flake	Rejuvenation flake	Trimming Flake	TASF	Flake	Undiag Flake Fragment	Cortical Blade	Blade	Blade-like flake	Core	Retouched	Utilized	Tested Cobble	Conchoidal shatter	Shattered pebble	Context Total	Hammerstone	Burnt Struck	Recort	Comments
584	101/208										1						1				
584	101/208										1						1				
584	101/209					1										1	2				
584	101/210										1						1				
584	101/211	1														1	2		½		
584	101/213															1	1				
584	101/215														1		1				Also white quartzite + rubbingstone present
584	101/215	1				1			2								4				
584	101/216															1	1				
584	101/216			1											1		2				
584	101/217					1											1				
584	102/201				1												1			1/1	
584	102/204													1	1		2				111g
584	102/207					1									1		2		1/2		
584	102/208														1	1	2				
584	102/208											1					1				
584	102/209														1		1				
584	102/210					1											1				
584	102/212											1			1	1	3		1/3		
584	102/213					1									1		2				
584	102/214																0				Also white quartzite present
584	102/214								1			1					2				
584	102/215					1											1				
584	102/216														2		2				
584	102/216					1											1				
584	102/216	1	1			2						1					5				Core tablet
584	102/217															1	1				
584	102/217									1						1	2				
584	102/219					1	1										2		2/2	½	
584	103/204					1											1				Siret flake
584	103/207					1			1								2				
584	103/208										2						2				
584	103/208									1		1					2				
584	103/211			1													1				
584	103/212	2		1		1			1								5				

Context	Square	Cortical Flake	Rejuvenation flake	Trimming Flake	TASF	Flake	Undiag Flake Fragment	Cortical Blade	Blade	Blade-like flake	Core	Retouched	Utilized	Tested Cobble	Conchoidal shatter	Shattered pebble	Context Total	Hammerstone	Burnt Struck	Recort	Comments
584	103/219										1						1				
584	103/220									1							1				
584	103/220									1							1				
584	104/203					2						1					3				
584	104/207					1											1				
584	104/207							1	1			1			1		4			¼	Recort is the BLF
584	104/210														1		1				
584	104/210					1								1			2		½		75g
584	104/212	1													1		2				
584	104/214									1						1	2		½		
584	104/214																0				
584	104/215	2				1											3		1/4		Poss all from same nodule
584	104/216														1		1				
584	104/217														1		1				
584	104/218														3		3		1/3		
584	104/218					1				1							2				
584	104/219	3				1					1						5				
584	104/220													1	2		3				Tested cobble weighs 121g
584	104/221					1									2		3				
584	104/221					2				1							3			1/3	
584	105/207											1					1				
584	105/208							1									1				
584	105/208					2			1								3				
584	105/210						1							1	2		4				56g
584	105/212															1	1				
584	105/212	1				1											2				
584	105/213					1	1									1	3				
584	105/214					1					1				1		3				
584	105/217														1		1				
584	105/218			1		2											3				
584	105/219			1											1		2				
584	105/220	1															1				
584	105/220			3					1						1		5				
584	105/221					1											1				
584	105/222													1			1				38g
584	105/222					1									1		2				Flake has very abraded striking

Context	Square	Cortical Flake	Rejuvenation flake	Trimming Flake	TASF	Flake	Undiag Flake Fragment	Cortical Blade	Blade	Blade-like flake	Core	Retouched	Utilized	Tested Cobble	Conchoidal shatter	Shattered pebble	Context Total	Hammerstone	Burnt Struck	Recort	Comments
																					platform
584	105/223					1											1				Cf axe manufacture flake
584	106/206			1													1				
584	106/207														1		1				
584	106/208										1						1				
584	106/208					1											1				
584	106/209															1	1				
584	106/210										1						1				
584	106/211	1															1	1			
584	106/211					1											1		1/1		
584	106/212	1									1						2				
584	106/213					1										1	2				
584	106/214	1									2				2		5				Poss some pieces from same nodule?
584	106/214	1							1								2				
584	106/215											1			2		3		1/3		
584	106/216					1			1								2		1/2		
584	106/216					1									1		2				
584	106/219					1											1				
584	106/220																0	1			
584	106/220											1					1				
584	106/221	1				1				1							3				
584	106/222												1		1		2				
584	106/222									1							1				
584	107/208						1										1				Prob blade-like flake
584	107/209											1					1				
584	107/212					2										1	3				
584	107/213															1	1		1/1		
584	107/215					1									1		2				
584	107/216										1						1				
584	107/219						1				1			1	1		4		1/4		68g
584	107/220					1			1								2				
584	107/222	1									1	1			1		4			1/4	
584	107/223										1			1	1	2	5				91g
584	107/223															2	2				Also some white quartzite present

Context	Square	Cortical Flake	Rejuvenation flake	Trimming Flake	TASF	Flake	Undiag Flake Fragment	Cortical Blade	Blade	Blade-like flake	Core	Retouched	Utilized	Tested Cobble	Conchoidal shatter	Shattered pebble	Context Total	Hammerstone	Burnt Struck	Recort	Comments	
584	108/206					1											1					
584	108/207					1											1					Cf axe manufacturing flake
584	108/212															1	1					
584	108/213														1		1					
584	108/216										1						1					
584	108/219	1				1				1							3					
584	108/220	1				1									1	1	4					
584	108/221	2				2		1							1	1	7		1/7			
584	108/222														4		4					Also some white quartzite present
584	109/206					1				1							2					
584	109/208														2		2					
584	109/209														1		1					
584	109/210															1	1					
584	109/210	2				2			1			1			1		7			1/7		
584	109/211	1							1							2	4					
584	109/213														1		1					
584	109/214														1		1					
584	109/216					1					1					1	3					Poss all from same cobble?
584	109/217														1		1					
584	109/218						1										1					
584	109/219	3				1										1	5					
584	109/220	1									1						2					
584	109/221					1											1					Part of flint quern
584	109/221					1				1					1		3					
584	109/222					1					1						2					
584	109/223	1													1		2					
584	110/207																0					Also some white quartzite present
584	110/208															1	1					
584	110/210					1											1					
584	110/211														1		1					
584	110/212																0					Also some white quartzite present
584	110/213									1							1					
584	110/214			1		1	1								1		4					

Context	Square	Cortical Flake	Rejuvenation flake	Trimming Flake	TASF	Flake	Undiag Flake Fragment	Cortical Blade	Blade	Blade-like flake	Core	Retouched	Utilized	Tested Cobble	Conchoidal shatter	Shattered pebble	Context Total	Hammerstone	Burnt Struck	Recort	Comments
584	110/217											1					1				
584	110/218					1							2				3				
584	110/218								1								1			1/1	
584	110/220									1						1	2				
584	110/222	1															1				
585											1				2		3				
589									1							1	2				
650			1				1					1					3			1/3	
703						1											1			1/1	
704												1			3		4				
928		1															1				Large, 88X126mm
996												1					1				
1009		1		1		1					1				2	1	7				
1013			1						1								2				
1016											1					1	2				
1025						1				1							2				
1041		1															1				
1060				1		2			1		1	1			1		7				
1060						2					2						4				Flake from pounder/Hammerstone
1060						6						1		1	1	2	11				35g
1060		1				3	3	1				1		1	3	7	20			1/20	45g; Flake probably utilized
1060	104/204	1				1											2				
1060	105/202					2	1	1			1						5				
1060	110/202	1				1						1		2	1	2	8				33g; 40g
1060	110/207	1				2		1	1	1							6			1/6	
1060	112/204	1				2	1			2							6				
1060	112/208						1			1	1				2		5				
1060	113/202					2									1		3				
1060	113/206					1											1				
1077		1				4									3		8				
1078						1											1				
1078												1					1				
1082		2				1						1			2	1	7				
1083						2	1		1	1	1						6				
1083	118/202									1							1				

Context	Square	Cortical Flake	Rejuvenation flake	Trimming Flake	TASF	Flake	Undiag Flake Fragment	Cortical Blade	Blade	Blade-like flake	Core	Retouched	Utilized	Tested Cobble	Conchoidal shatter	Shattered pebble	Context Total	Hammerstone	Burnt Struck	Recort	Comments
1083	118/205			1					1			1					3				
1083	118/207															1	1				
1083	119/204	1	1			2						1			2	3	10				Transverse core rejuvenation flake
1083	120/203														2		2				
1083	120/203					1	1		1			1					4				
1083	120/207					1					1						2				
1083	120/209					1					1				2		4				
1083	122/207			1		1	1		1								4			1/4	
1087						2	1										3		1/3		
1090	-					1											1				
1090	108/202											2					2				From same nodule – little tool kit?:
1090	108/204					1					1						2				
1090	110/204									1		2			2		5				
1090	112/202					1											1				
1090	113/202	1				5	1		1	1	1	1			1		12				
1090	115/202	1					1										2				CF part of a thermally shattered core
1096	115/200					1			1								2				
1154						2	1				1				3		7		1/7		
1155		1				3		1		1							6				
1156	-					2											2				
1156	106/395								1	1							2		2/2		Same Meso nodule
1269		1				1											2				CF prob utilized
1471				1		1			1								3				
1481		1															1				
1482									1								1				
1506						1											1			1/1	
1539									2		1						3				Pseudo-burin
1555		1					2										3		1/3		
1557	160/395	2				2			3	3							10				
1557	162/395	1		1											1		3				
1560	160/395								1								1			1/1	
1566		1				2	1	1		1				1	2		9		1/9	1/9	Tested cobble weighs 31g
1575		1															1				

Context	Square	Cortical Flake	Rejuvenation flake	Trimming Flake	TASF	Flake	Undiag Flake Fragment	Cortical Blade	Blade	Blade-like flake	Core	Retouched	Utilized	Tested Cobble	Conchoidal shatter	Shattered pebble	Context Total	Hammerstone	Burnt Struck	Recort	Comments
1577	-														1		1				
1577	170/403	2		1		3	1		2		1				1	1	12				
1577	170/403										1					1	2				
1577	171/395	1				1											2				
1577	171/400			1				1							1		3				
1577	172/395					1					1						2				
1577	172/401														1		1		1/1		
1577	172/405	1										1					2				
1577	172/407					1											1				
1577	174/405					1											1				
1577	174/408	1									2	1			1	2	7				
1577	176/401									1							1				Bit like a failed micro-burin
1577	176/405					1											1				
1582		1				1						1					3				
1584						1		1	1								3				
1586										1					1		2				
1597	171/405															1	1				
1796		1				2											3				Same nodule – chalk-flint – masonry?
1797						1											1				Same as [1796]
1825										1							1				
1830						1											1				
1858															1		1		1/1		Very burnt cf HNT95 glass flint
1918	089/200									1							1				
1918	091/198								1								1				
1918	091/200					1											1				
1918	093/200					1					1						2				
1918	095/200	2				1											3				
1922	081/204														1		1				
1922	083/200							1	1								2				
1923	081/204						1										1				
1925	081/206			1													1				
1925	083/200						1				1						2			1/1	
1925	083/200						1										1		1/1		
1925	083/206														1		1				
1925	085/200															1	1				

Context	Square	Cortical Flake	Rejuvenation flake	Trimming Flake	TASF	Flake	Undiag Flake Fragment	Cortical Blade	Blade	Blade-like flake	Core	Retouched	Utilized	Tested Cobble	Conchoidal shatter	Shattered pebble	Context Total	Hammerstone	Burnt Struck	Recort	Comments
1925	085/200														1		1				
1929												1					1				
Total		73	4	21	1	165	33	8	42	40	44	40	3	15	113	60	662				
%		11.0	0.6	3.2	0.2	24.9	5.0	1.2	6.3	6.0	6.6	6.0	0.5	2.3	17.1	9.1	100.0				

Catalogue: Descriptions of Complete Cores

Context	Square	Ref	Type	Clark et al 1960	No. removals	Edge Prep	Weight	Description
584	100/214		Flake	A2	<10	None	24	Sub-angular pebble with a few flakes removed
584	101/208		Flake	C	>10	None	56	Pebble with a number of randomly removed flakes
584	101/208		Flake	C	>10	None	57	Irregularly shaped, random removals, lots of incipient Hertzian cones
584	101/210		Narrow Flake	A2	>10	Yes	25	Exhausted 'front' type on rounded pebble, some narrow flakes, lots incipient Hertzian cones
584	103/208		Flake	B keeled	10+	No	78	Many incipient Hertzian cones
584	103/208		Flake	A2	<10	Some	21	Many incipient Hertzian cones
584	103/219		Flake	A2	<10	None	51	Elongated sub-angular pebble burrowed into at one end
584	104/219		Flake	A2	10+	None	22	Small pebble 'burrowed' into at one end
584	105/214		Flake	E	<10	None	27	Thermal fragment with a few flakes randomly removed
584	106/208		Narrow Flake	C	>10	Yes	40	Rounded cobble with thick cortex, fine edge trimming of Striking platforms, extensively reduced but probably produced blades earlier on
584	106/210		Flake	D	<10	None	34	A few flakes removed, including some keel style, from end of a sub-angular pebble – could be a chopping-type core tool
584	106/212		Flake	A2	<10	None	15	Poss a thermal frag from a larger core
584	106/214		Flake	D	<10	None	99	Series of flakes removed keel style from end of a rounded pebble – could be a chopping-type core tool
584	106/214		Flake	A2	<10	Some	27	A small number of small flakes removed from one end of an angular pebble – the "SP/core face" has been trimmed, suggesting a core tool?
584	107/216		Narrow Flake	E	>10	Yes	16	Lenticular, centripetally reduced on two faces, cf miniature axe, wedge, Levallois core etc but very small
584	107/219		Flake	C	>10	Some	99	Random multi-plat flake core
584	107/223		Flake	A2	<10	None	28	Small split pebble 'burrowed' into at one end

Context	Square	Ref	Type	Clark et al 1960	No. removals	Edge Prep	Weight	Description
584	108/216		Flake	A2	<10	No	28	A few flakes removed from the edge of an angular pebble, lots incipient Hertzian cones – possibly a steep-edged core tool
584	109/216		Flake	E	<10	None	35	Pebble with a few randomly removed flakes
584	109/220		Flake	A2	<10	None	35	Sub-angular pebble with a few flakes removed by burrowing in to one end
584	109/222		Narrow Flake	A2	>10	Yes	22	Exhausted 'front' type on rounded pebble, lots narrow flakes and possible had produced blades?
585			Flake	C	>10	Some	51	Rounded alluvial cobble with many large flakes removed - nice flake core
1009			Flake	-	<10	None	76	A few flakes removed from the edge of an angular chunk
1016			Flake	-	>10	None	35	Large flake with a series of small flakes removed mainly from the dorsal surface – could be large and crude denticulate
1060			Flake	-	>10	Some	34	Irregular lenticular core with centripetal removals on one face and a few larger flakes removed from the other – a bit like a not very good Levallois core
1060			Flake	-	>10	Some	51	Flakes removed from the edges of an angular chunk
1060			Flake	-	<10	Some	22	Broken lenticular shaped angular chunk with a few small flakes removed from both faces around the circumference – attempt at vague Levallois technique? Tool?
1060	105/202		Flake	A2	<10	None	67	A series of flakes removed from side of an angular chunk
1060	112/208		Flake	A2	>10	Some	37	Series of small flakes removed from around the perimeter of what appears to be a large flake, of distinctive banded flint – could be a tool
1083			Flake	C	>10	None	25	Fairly randomly reduced flake core on an alluvial pebble
1083	120/207		Flake	D	<10	None	67	Lots of flakes removed keel style from one side of rounded pebble resulting in a chopper-like edge – could be a core tool
1083	120/209		Flake	-	<10	None	26	A few flakes removed from the end of a elongated pebble – lots incipient Hertzian cones
1090	108/204		Flake	D	>10	None	48	Lots of flakes removed keel style from one side of rounded pebble resulting in a chopper-like edge – could be a core tool and this is supported by vast numbers of small incipient Hertzian cones on one edge – good example
1090	110/204		Flake	C	>10	Some	34	Extensively but randomly reduced angular cobble
1090	113/202		Flake	D	>10	Some	23	Angular chunk reduced keel style
1154			Flake	A2	>10	Some	40	A number of flakes removed from one side of a thermally split cobble also some incipient Hertzian cones
1539			Blade	-	<10	Yes	43	Large thick primary flake with a number of blades removed from its right lateral margin. Resembles a pseudo-burin with a small semi-circular platform/working edge
1577	170/403		Blade	A2	>10	Facet	77	Classic 'front' type blade core on a bullhead cobble. Some basal damage suggests use of an anvil
1577	172/395		Flake	-	>10	No	26	A few flakes removed the ends of a elongated pebble cf and poss same nodule as that from 174/408
1577	174/408		Flake	A2	<10	No	24	Irregular angular chunk with a series of rather randomly removed flakes
1577	174/408		Flake	-	<10	No	19	A few flakes removed the ends of a elongated pebble
1918	093/200		Flake	-	<10	None	24	Irreg pebble with a few flakes randomly removed, also numerous incipient Hertzian cones
1925	083/200	Sp2	Narrow Flake	C	>10	Some	28	Exhausted on small rounded pebble with many narrow flakes and poss. blades removed

Catalogue: Description of Retouched Implements

Context	Square	Ref	Type	Sub-type	Size	Comments
+	115/200		Scraper	Short end	45X42X10	Flake mostly covered in thick cortex with convex, 'nosed' medium (7mm) steep scalar retouch on DD
087		Sp1	Piercer	Awl	41X43X11	Large flake fragment with one edge modified by alternate flaking to form a spur-like point after the flake broke
435			Utilized	Cutting	46X47X11	Flake with heavily (bifacially) abraded straight and concave margins
584	100/216		Scraper	Denticulate	28X31X8	Broken flake with irregular uneven medium (6mm) convex steep scalar retouch on DD
584	101/208		Scraper	End	31X15X7	Odd – small narrow cortical flake with convex variable (1-6mm) shallow scalar retouch on DD
584	102/208		Edge trimmed		32X35X5	Thin flake with slightly convex fine (<3mm) shallow scalar retouch on L and R dorsal margins and around bulbar end on ventral - ?cf squat flakes?
584	102/212		Edge trimmed	cutting	>28X32X9	Slightly burnt flake fragment with slightly convex medium (5mm) shallow invasive retouch along RD
584	102/214		Edge trimmed	Blunting	>38X34X8	Large fragment of a flake with one edge modified with straight fine (3mm) shallow parallel retouch
584	102/216		Notch		>26X12X3	Blade with 5mm deep notch cut into LD which has snapped removing bulbar end – could be a rough attempt at micro-burination or a piercer using the bulbar end as the point but which has snapped off
584	103/208		Scraper	End-and-side	28X23X8	Small narrow flake with notably pronounced BoP and convex medium (7mm) scalar steep retouch on DD and medium semi-invasive (7mm) shallower retouch on L and R D – cf thumbnail examples + 107/209
584	104/203		Scraper	End	46X21X10	?BLF with minimal medium (7mm) steep convex retouch on DD
584	104/207		Edge trimmed		15X22X4	Small flake with slightly concave fine (1mm) inverse parallel retouch along distal
584	105/207		Edge trimmed	Blunting	44X15X9	Crested/core rejuvenation blade with light edge retouch/use-wear along LD
584	106/215		Scraper	End	35X25X8	Heavily burnt, symmetrical scraper with convex medium (8mm) steep scalar retouch on DD
584	106/220		Scraper	End-and-side	38X32X15	Flake with convex medium (9mm) scalar steep retouch on DD and fine (7mm) semi-invasive retouch on LD – cf that from 107/209 but larger. Also a single flake removed from LV – accident?
584	106/222		Utilized	Cutting	38X23X6	BLF with blunted R lateral and cortical L lateral
584	107/209		Scraper	End-and-side	28X21X8	Small narrow flake with convex medium (8mm) scalar steep retouch on DD and fine (3mm) shallower retouch on LD – cf thumbnail examples
584	107/222		Truncated blade		38X16V5	Recorticated, syst blade with obliquely truncated distal, some utilization traces along lateral margins
584	109/210		Scraper	Denticulate	>31X45X12	Fragment of a large flake with straight large notched cut on the ?DD forming a true saw edge
584	110/217		Utilized	Cutting	44X30X11	Thermal spall with light denticulate-type modification along one edge – could be natural but looks expedient
584	110/218		Utilized	Cutting	>57X30X12	?Blade with fine use-wear along L margin and cortex on R
584	110/218		Utilized	Piercer	32X14X5	Blade with light notching and retouch forming awl-type piercer on distal end
650			Microlith	Shouldered point	28X10X2	
704			Edge trimmed	Blunted	>25X21X5	BLF with straight fine (1mm) scalar retouch along LD – forms a notch or spur
996			Piercer	Minimal	>42X25X5	?Blade or BLF with striking platform apparently modified to make a bluntish piercer?
1060			Arrowhead	Chisel/PT	22X20X3	Flake transversely truncated at both distal and proximal ends with fine steep retouch
1060			Scraper	On thermal	44X34X16	Thermal spall with heavy (17mm) straight slightly denticulated steep scalar retouch along two edges forming right angle

Context	Square	Ref	Type	Sub-type	Size	Comments
1060	-		Edge Trimmed		>32X35X8	Broken flake with light (1mm) straight edge blunting along RD
1060	110/202		Scraper	Side	30X38X10	Partially cortical flake with well made medium (8mm) convex steep scalar retouch on LD
1078		SF2	Scraper	Short end	40X>22X11	Laterally split ?symmetrical on cortical flake with well made medium (5mm) convex moderately steep scalar retouch on DD
1082			Scraper	On thermal	59X50X16	Thermal spall with fine (3mm) convex shallow retouch on part of one edge
1083	118/205		Serrate	Blade	57X20X5	Blade with slightly sinuous worn fine serrations along LD
1083	119/204		Piercer	Elaborate	65X19X18	Elaborate and extensively retouched piercer made from narrowing a large flake. Some wear and gloss on a relatively blunt tip
1083	120/203		Scraper	Short end	35X32X13	Nicely made but broken on mostly cortical flake with medium (6mm) convex shallow parallel retouch
1090	108/202		Scraper	Short end	37X46X20	Mostly cortical, thick flake with irregular convex (denticulated?) medium (6mm) steep retouch on DD
1090	108/202		Utilized	Cutting	>30X19X4	Cortically backed broken?blade with light retouch/heavy usewear on opposite margin
1090	110/204		Miscellaneous		>58X52X12	Large broken flake with blunting at one end – uncertain why δ is was done
1090	110/204		Scraper	Long end	60X3X14	Although this of LES proportions it is actually a nicely made teardrop shaped thick mostly cortical flake with convex medium (8mm) steep scalar retouch on DD
1090	113/202		Scraper	On thermal	55X38X17	Thermal spall with extensive (11mm) steep straight scalar retouch on one edge and medium (7mm) shallow convex retouch on another
1577	172/405		Scraper	Irregular	19X33X10	Irregular flake with convex medium (6mm) semi-steep retouch on DD and RD
1577	174/408		Scraper	End	42X42X11	Fairly symmetrical flake with convex medium (9mm) semi-steep scalar retouch on DD
1582			Scraper	Long end	>49X27X13	Lovely example of a sturdy and resharpened LES, convex medium (11mm) very steep scalar ret on DD
1929		SF22	Utilized	Piercer	56X17X5	Blade with light edge blunting along LD, a small notch (to help handling) on RD and a beaked point formed on DD

APPENDIX 3

BURNT STONE ASSESSMENT

Barry John Bishop

INTRODUCTION

Burnt stone weighing just under 61kg was recovered from the archaeological investigations at 169 Tower Bridge Road. This report assesses that recovered during all phases of the investigations and considers the material as a single assemblage. It quantifies and describes the material, assesses its significance and recommends any further work required for it to achieve its full research potential. The burnt stone overwhelming consisted of heat-affected flint with very occasional pieces of burnt quartzite also present. A full catalogue of the material from each context is provided at the end of the burnt flint Appendix following this report.

QUANTIFICATION

A total of 7558 pieces of otherwise unmodified burnt stone weighing 60,971g was recovered. The majority of this, over 50kg or 82% of the total, was recovered from sandy sub-soils dated to the prehistoric period and recorded to within a 1m² grid. Much of the remainder of the material also came from similar soil horizons but not recorded to a 1m² grid resolution, with smaller quantities recovered from a variety of prehistoric and later features.

PREHISTORIC SAND HORIZONS

The majority, around 95%, of the burnt stone recovered from the prehistoric sand horizons was intensively burnt, resulting in the flint attaining a uniform grey-white colour and becoming heavily fire-crazed. Given the large size of this assemblage, the uniformity in burning would be consistent with much of the material having been deliberately and systematically heated, as opposed to the rather variable degrees of burning that occurs when flint is incidentally heated, such as may occur in a hearth. Its distribution within the sand horizons varied quite considerably, there was an average of 202g of burnt stone per 1m², with a maximum of 927g (in square [584, 104/207]) and some squares contained no burnt stone. Although the amount per square varied, there were no obvious larger concentrations, clusters or clear density fall-off patterns.

It is uncertain whether the squares containing the higher quantities indicate the locations of hearths, or just incidental density variations within a wider spread or layer of burnt stone. If they do represent hearths, they must have been disturbed as there was no evidence for *in situ* scorching of the sandy matrix containing the higher quantities of burnt stone. There were also no greater incidences of burnt struck flints from these squares, which would indicate that either any

potential hearths were early, largely predating the deposition of the struck flint that occurred through the Mesolithic to Bronze Age periods, or that the burnt stone had been dumped and did not affect the struck flint.

Although burnt flint can arise from the incidental burning of naturally occurring pebbles during hearth use, the quantities present here suggest its deliberate production. This could include the use of stone for lining hearths, although as most of what was recovered was flint, which tends to explode when heated and would present a hazard to anyone sitting or working close-by, it is unlikely that this was routinely practiced with 'normal' domestic types hearths. It would seem perhaps more likely that the majority of burnt stone from the sand horizons was not burnt *in situ* but either dumped or had eroded from a larger accumulation of material. Such a scenario was noted at Phoenix Wharf, c. 300m to the east, where a burnt mound associated with a cooking pit and located on the very edge of the island had been ploughed flat, resulting in an extensive spread of burnt flint present within the prehistoric ploughsoil (Bowsher 1991). Interestingly, a cooking pit of a type comparable to those associated with 'burnt mound' complexes was excavated adjacent to this site, at Vinegar Yard (Heard 2000), and very similar dense spreads of burnt flint have been recorded at a number of locations along the southern margins of Horselydown (eg Bishop 2004) and at many other locations along the margins of the north Southwark islands. It is likely that a number of 'burnt mound' features were present in the area and, in this respect, this may be comparable to the 'strings' of burnt mounds that were constructed along the rapidly flooding Fen margins in Cambridgeshire (eg Edmonds *et al.* 1999; M. Knight pers comm.).

OTHER FEATURES

The remainder of the burnt stone, which comprised less than 20% of the total collection, was distributed, mostly in small quantities within a variety of features dating from the prehistoric to the modern period. Much of this was present in deposits comparable to the prehistoric sand horizons although not recorded to the nearest 1m² grid. The material present within discrete features may represent *in situ* dumping of hearth waste but with the majority, particularly where only small quantities were present, it was perhaps most likely to have been residually introduced as part of a 'background' scatter, this probably predominantly arising from disturbance to the prehistoric sand horizons. A few Medieval and later features contained relatively high quantities of burnt flint, some of which had been intensively burnt. It is unlikely that this was produced from contemporary hearth use but may represent the residues from industrial activity, such as smithing or glass making.

CONCLUSION AND DISCUSSION

The majority of the burnt stone recovered at the site was present within the prehistoric sand horizons. This material appeared to have been deliberately burnt indicating its large-scale production at or near the site. Although it is possible that it represents a palimpsest of hearth use and a scatter of general occupation detritus, there are indications that it consisted of the dumped or eroded remnants from a larger accumulation that had perhaps been ploughed into an expansive spread. The deliberate heating of flint, presumably under controlled conditions as it has tendency to explode, has often been documented from prehistoric sites and a variety of reasons have been forwarded to account for its production. Perhaps the most favoured explanations regards it as being connected with cooking activities, its scale suggesting communal efforts and it perhaps being associated with feasting or ceremonial practices. Other explanations regard it as the residues from saunas (Barfield and Hodder 1987) and a variety of industrial processes, such as leather making or wool processing, and ceremonial purposes have been put forward (eg Hedges 1975; Barfield and Hodder 1987; Barfield 1991; Jeffery 1991; Dunkin 2001). The remainder of the material probably mostly represents redeposited material originating from the sand horizons although some features may have contained dumped residues from hearth use and a few medieval and post-medieval features may have contained burnt stone arising from contemporary industrial activities.

RECOMMENDATIONS

Detailed spatial analysis of the burnt may indicate whether the material, in part at least, originates from repeated hearth use or was a consequence of a more determined episode of burnt stone production, the results of which had been dumped or eroded across the site. Detailed contextual considerations may also elucidate the extent of redeposition occurring at the site and the range and extent of other activities that may have led to burnt stone being produced and deposited, from the prehistoric period to the present. It is therefore recommended that the spatial distribution and contextual origin of the burnt stone is plotted and its significance included in any consideration of the prehistoric and later occupation at the site.

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Burnt Stone Appendix

Site Code	Context	Ref	Grid E	Grid N	Pieces >10mm	Weight (g)	Ave wt
TWO00	3				3	26	8.7
TWO00	5				4	36	9.0
TWO00	20				2	75	37.5
TWO00	36				1	63	63.0
TWO00	40		Tr2		4	33	8.3
TWO00	79				1	1	1.0
TWO00	87		Sp1		20	495	24.8
TWO00	87		Sp2		9	151	16.8
TWO00	87				35	218	6.2
TWO00	100		Sp1		10	67	6.7
TWO00	100		Sp2		1	3	3.0
TWO00	101				6	36	6.0
TWO00	101				2	37	18.5
TWO00	366				1	4	4.0
TWO00	440				2	8	4.0
TWO00	466				1	29	29.0
TWO00	467				4	41	10.3
TWO00	554				29	231	8.0
TWO00	584		100	201	13	71	5.5
TWO00	584		100	203	17	186	10.9
TWO00	584		100	204	2	22	11.0
TWO00	584		100	205	29	273	9.4
TWO00	584		100	206	13	196	15.1
TWO00	584		100	208	36	285	7.9
TWO00	584		100	209	35	328	9.4
TWO00	584		100	210	20	152	7.6
TWO00	584		100	211	7	39	5.6
TWO00	584		100	213	40	229	5.7
TWO00	584		100	214	103	579	5.6
TWO00	584		100	215	67	236	3.5
TWO00	584		100	216	129	901	7.0
TWO00	584		100	217	72	544	7.6
TWO00	584		100	218	38	259	6.8
TWO00	584		101	114	115	833	7.2
TWO00	584		101	201	37	257	6.9
TWO00	584		101	203	6	24	4.0
TWO00	584		101	204	10	62	6.2
TWO00	584		101	205	18	116	6.4
TWO00	584		101	206	22	242	11.0
TWO00	584		101	207	30	291	9.7
TWO00	584		101	208	49	417	8.5
TWO00	584		101	209	39	399	10.2
TWO00	584		101	210	24	218	9.1
TWO00	584		101	211	21	90	4.3
TWO00	584		101	213	22	208	9.5

Site Code	Context	Ref	Grid E	Grid N	Pieces >10mm	Weight (g)	Ave wt
TWO00	584		101	215	125	826	6.6
TWO00	584		101	216	92	657	7.1
TWO00	584		101	217	71	336	4.7
TWO00	584		101	218	17	116	6.8
TWO00	584		101	508	42	422	10.0
TWO00	584		102	201	47	340	7.2
TWO00	584		102	202	30	156	5.2
TWO00	584		102	203	18	115	6.4
TWO00	584		102	204	10	103	10.3
TWO00	584		102	205	23	289	12.6
TWO00	584		102	206	13	102	7.8
TWO00	584		102	207	38	487	12.8
TWO00	584		102	208	36	375	10.4
TWO00	584		102	209	18	202	11.2
TWO00	584		102	210	8	43	5.4
TWO00	584		102	211	52	325	6.3
TWO00	584		102	212	36	169	4.7
TWO00	584		102	213	43	244	5.7
TWO00	584		102	214	41	175	4.3
TWO00	584		102	215	43	319	7.4
TWO00	584		102	217	50	464	9.3
TWO00	584		102	219	46	279	6.1
TWO00	584		103	201	55	325	5.9
TWO00	584		103	202	6	55	9.2
TWO00	584		103	204	4	59	14.8
TWO00	584		103	205	12	253	21.1
TWO00	584		103	207	61	284	4.7
TWO00	584		103	208	49	399	8.1
TWO00	584		103	209	10	144	14.4
TWO00	584		103	211	21	128	6.1
TWO00	584		103	212	43	314	7.3
TWO00	584		103	213	29	178	6.1
TWO00	584		103	215	31	214	6.9
TWO00	584		103	216	24	184	7.7
TWO00	584		103	217	26	127	4.9
TWO00	584		103	219	50	254	5.1
TWO00	584		103	220	80	455	5.7
TWO00	584		104	201	30	200	6.7
TWO00	584		104	202	11	139	12.6
TWO00	584		104	203	22	241	11.0
TWO00	584		104	204	1	33	33.0
TWO00	584		104	205	10	209	20.9
TWO00	584		104	206	8	47	5.9
TWO00	584		104	207	127	927	7.3
TWO00	584		104	208	31	302	9.7
TWO00	584		104	209	5	56	11.2
TWO00	584		104	210	35	386	11.0

Site Code	Context	Ref	Grid E	Grid N	Pieces >10mm	Weight (g)	Ave wt
TWO00	584		104	212	105	722	6.9
TWO00	584		104	213	82	533	6.5
TWO00	584		104	214	51	427	8.4
TWO00	584		104	215	68	473	7.0
TWO00	584		104	216	68	345	5.1
TWO00	584		104	217	120	826	6.9
TWO00	584		104	218	90	564	6.3
TWO00	584		104	219	74	471	6.4
TWO00	584		104	220	12	267	22.3
TWO00	584		104	221	86	605	7.0
TWO00	584		105	206	26	192	7.4
TWO00	584		105	207	153	298	1.9
TWO00	584		105	208	19	168	8.8
TWO00	584		105	209	45	395	8.8
TWO00	584		105	210	48	347	7.2
TWO00	584		105	211	9	70	7.8
TWO00	584		105	212	33	266	8.1
TWO00	584		105	213	7	95	13.6
TWO00	584		105	214	11	97	8.8
TWO00	584		105	215	14	141	10.1
TWO00	584		105	216	78	594	7.6
TWO00	584		105	217	16	146	9.1
TWO00	584		105	218	20	205	10.3
TWO00	584		105	219	17	195	11.5
TWO00	584		105	220	32	272	8.5
TWO00	584		105	221	10	49	4.9
TWO00	584		105	222	34	324	9.5
TWO00	584		105	223	5	30	6.0
TWO00	584		106	206	8	31	3.9
TWO00	584		106	207	29	260	9.0
TWO00	584		106	208	21	246	11.7
TWO00	584		106	209	73	495	6.8
TWO00	584		106	210	43	200	4.7
TWO00	584		106	211	31	273	8.8
TWO00	584		106	212	48	482	10.0
TWO00	584		106	213	27	258	9.6
TWO00	584		106	214	46	447	9.7
TWO00	584		106	215	111	390	3.5
TWO00	584		106	216	72	513	7.1
TWO00	584		106	218	13	146	11.2
TWO00	584		106	219	10	204	20.4
TWO00	584		106	220	7	57	8.1
TWO00	584		106	221	20	205	10.3
TWO00	584		106	222	21	168	8.0
TWO00	584		107	207	38	267	7.0
TWO00	584		107	208	49	471	9.6
TWO00	584		107	209	4	16	4.0

Site Code	Context	Ref	Grid E	Grid N	Pieces >10mm	Weight (g)	Ave wt
TWO00	584		107	211	8	45	5.6
TWO00	584		107	212	105	591	5.6
TWO00	584		107	213	55	376	6.8
TWO00	584		107	215	8	76	9.5
TWO00	584		107	216	26	341	13.1
TWO00	584		107	217	9	48	5.3
TWO00	584		107	219	40	267	6.7
TWO00	584		107	220	17	148	8.7
TWO00	584		107	222	15	188	12.5
TWO00	584		107	223	72	722	10.0
TWO00	584		108	206	40	196	4.9
TWO00	584		108	207	54	295	5.5
TWO00	584		108	209	24	287	12.0
TWO00	584		108	211	11	142	12.9
TWO00	584		108	212	50	274	5.5
TWO00	584		108	213	44	365	8.3
TWO00	584		108	214	17	139	8.2
TWO00	584		108	215	3	34	11.3
TWO00	584		108	216	14	221	15.8
TWO00	584		108	219	30	205	6.8
TWO00	584		108	220	25	242	9.7
TWO00	584		108	221	23	184	8.0
TWO00	584		108	222	21	215	10.2
TWO00	584		108	224	3	16	5.3
TWO00	584		109	206	26	96	3.7
TWO00	584		109	207	47	339	7.2
TWO00	584		109	208	25	394	15.8
TWO00	584		109	209	22	209	9.5
TWO00	584		109	210	50	482	9.6
TWO00	584		109	211	52	312	6.0
TWO00	584		109	213	38	271	7.1
TWO00	584		109	214	25	232	9.3
TWO00	584		109	216	28	308	11.0
TWO00	584		109	217	13	163	12.5
TWO00	584		109	218	10	107	10.7
TWO00	584		109	219	40	299	7.5
TWO00	584		109	220	17	151	8.9
TWO00	584		109	221	15	82	5.5
TWO00	584		109	222	7	48	6.9
TWO00	584		109	223	15	171	11.4
TWO00	584		110	206	6	35	5.8
TWO00	584		110	207	41	239	5.8
TWO00	584		110	208	18	166	9.2
TWO00	584		110	209	10	54	5.4
TWO00	584		110	210	12	190	15.8
TWO00	584		110	211	20	306	15.3
TWO00	584		110	212	7	102	14.6

Site Code	Context	Ref	Grid E	Grid N	Pieces >10mm	Weight (g)	Ave wt
TWO00	584		110	213	12	126	10.5
TWO00	584		110	214	3	19	6.3
TWO00	584		110	216	11	112	10.2
TWO00	584		110	217	21	137	6.5
TWO00	584		110	218	15	131	8.7
TWO00	584		110	219	12	154	12.8
TWO00	584		110	220	13	131	10.1
TWO00	584		110	221	37	335	9.1
TWO00	584		110	222	11	96	8.7
TWO00	584		115	210	4	22	5.5
TWO00	584		210	212	7	104	14.9
TWO00	585		<16>		4	16	4.0
TWO00	585				1	1	1.0
TWO00	589				1	5	5.0
TWO00	611				11	75	6.8
TWO00	703				150	356	2.4
TWO00	703				292	2040	7.0
TWO00	704				26	194	7.5
TWO00	704				207	1402	6.8
TWO00	721				16	176	11.0
TBA03	1009		-	-	10	103	10.3
TBA03	1009				8	142	17.8
TBA03	1016				9	148	16.4
TBA03	1060		104	204	8	127	15.9
TBA03	1060		110	202	24	299	12.5
TBA03	1060		110	207	7	164	23.4
TBA03	1060		112	204	5	70	14.0
TBA03	1060		112	208	7	91	13.0
TBA03	1060		113	202	1	18	18.0
TBA03	1060		113	206	5	54	10.8
TBA03	1060		-	-	12	175	14.6
TBA03	1060		-	-	18	204	11.3
TBA03	1060		-	-	9	314	34.9
TBA03	1060		-	-	23	379	16.5
TBA03	1060		-	-	19	401	21.1
TBA03	1060		-	-	46	673	14.6
TBA03	1060				5	79	15.8
TBA03	1060				17	263	15.5
TBA03	1061		105	202	8	119	14.9
TBA03	1077		-	-	1	25	25.0
TBA03	1077				3	81	27.0
TBA03	1078				3	48	16.0
TBA03	1078				2	59	29.5
TBA03	1082				7	120	17.1
TBA03	1083		115	200	2	34	17.0
TBA03	1083		115	200	4	65	16.3
TBA03	1083		118	204	4	79	19.8

Site Code	Context	Ref	Grid E	Grid N	Pieces >10mm	Weight (g)	Ave wt
TBA03	1083		118	205	4	45	11.3
TBA03	1083		118	207	4	57	14.3
TBA03	1083		119	204	10	136	13.6
TBA03	1083		120	203	1	24	24.0
TBA03	1083		120	203	8	78	9.8
TBA03	1083		120	209	5	98	19.6
TBA03	1083		122	203	2	40	20.0
TBA03	1083		122	207	3	95	31.7
TBA03	1083		122	209	2	47	23.5
TBA03	1090		108	202	1	9	9.0
TBA03	1090		108	204	3	65	21.7
TBA03	1090		110	204	1	4	4.0
TBA03	1090		110	204	8	123	15.4
TBA03	1090		112	202	2	14	7.0
TBA03	1090		113	202	9	144	16.0
TBA03	1090		115	202	4	108	27.0
TBA03	1090		-	-	7	73	10.4
TBA03	1096		115	200	1	11	11.0
TBB03	1118				1	7	7.0
TBB03	1154				14	159	11.4
TBB03	1156				2	10	5.0
TBB03	1471				3	27	9.0
TBB03	1475				1	34	34.0
TBB03	1479				1	109	109.0
TBB03	1539				13	249	19.2
TBB03	1555				2	15	7.5
TBB03	1557		160	395	9	198	22.0
TBB03	1557				2	60	30.0
TBB03	1557				3	79	26.3
TBB03	1560		160	395	1	4	4.0
TBB03	1566				4	73	18.3
TBB03	1566				6	120	20.0
TBB03	1577		170	401	3	16	5.3
TBB03	1577		170	403	8	66	8.3
TBB03	1577		170	403	12	218	18.2
TBB03	1577		171	395	4	30	7.5
TBB03	1577		171	405	10	187	18.7
TBB03	1577		172	401	2	20	10.0
TBB03	1577		172	405	8	211	26.4
TBB03	1577		172	407	7	91	13.0
TBB03	1577		174	401	1	6	6.0
TBB03	1577		174	403	2	13	6.5
TBB03	1577		174	405	3	52	17.3
TBB03	1577		174	408	4	66	16.5
TBB03	1577		176	399	2	76	38.0
TBB03	1577		176	401	6	40	6.7
TBB03	1577		176	403	2	14	7.0

Site Code	Context	Ref	Grid E	Grid N	Pieces >10mm	Weight (g)	Ave wt
TBB03	1577		176	405	5	71	14.2
TBB03	1577				5	36	7.2
TBB03	1578				2	55	27.5
TBB03	1582				1	56	56.0
TBB03	1584				1	30	30.0
TBB03	1586				3	42	14.0
TBB03	1667				1	9	9.0
TBB03	1829				4	5	1.3
TBB03	1918		89	202	1	7	7.0
TBB03	1918				1	14	14.0
TBB03	1922	Sp2	79	204	1	38	38.0
TBB03	1922	Sp3	81	203	2	33	16.5
TBB03	1922		81	204	2	2	1.0
TBB03	1922	Sp1	81	204	1	16	16.0
TBB03	1922	Sp1	81	206	2	11	5.5
TBB03	1922	Sp2	81	206	4	36	9.0
TBB03	1925	Sp2	81	200	1	14	14.0
TBB03	1925	Sp1	81	202	2	5	2.5
TBB03	1925	Sp2	81	206	1	7	7.0
TBB03	1925	Sp3	83	198	4	22	5.5
TBB03	1925	Sp2	83	198	7	36	5.1
TBB03	1925	Sp1	83	198	11	44	4.0
TBB03	1925	Sp3	83	200	4	6	1.5
TBB03	1925	Sp1	83	200	5	24	4.8
TBB03	1925	Sp2	83	200	6	77	12.8
TBB03	1925	Sp3	83	202	1	9	9.0
TBB03	1925		83	206	2	24	12.0
TBB03	1925	Sp1	85	198	2	58	29.0
TBB03	1925	Sp1	85	200	3	18	6.0
TBB03	1925	Sp2	85	202	2	15	7.5
TBB03	1929				12	119	9.9
TBA03	+		108	208	23	400	17.4
?	+		112	206	3	30	10.0
TBA03	+		115	200	8	100	12.5
TBB03	+		170	407	2	28	14.0

APPENDIX 4

PREHISTORIC POTTERY ASSESSMENT

Mike Seager Thomas

The prehistoric pottery assemblage from Tower Bridge Road comprises 200 grams of mostly fragmented and/ or highly abraded body sherds. Two period groups can be distinguished with confidence: Late Bronze Age, represented by a number of different sandy, flint-tempered fabrics, and Late Iron Age, represented by sandy and grog-tempered fabrics. Less certain is the dating of two sherds in grog-tempered fabrics, and three sherds in vesicular fabrics. The grog-tempered wares *could* be Beaker or even Late Neolithic (the fabric resembles some Grooved Ware fabrics), the vesicular wares Late Neolithic (the analogue once again Grooved Ware), Late Bronze Age or Late Iron Age/ Early Roman. There is also overlap between fabrics here assigned to the Late Bronze Age and fabrics elsewhere assigned to the earlier Neolithic. It is possible therefore that there was an earlier presence on site. Having acknowledged this however, it should be emphasised that Tower Bridge Road's Late Bronze and Iron Age groups form coherent assemblages, and that the ambiguously dated sherds were directly associated with one or other of these. Thus no pottery-yielding feature need be assigned a *terminus post quem* earlier than the Late Bronze Age.

Owing to the fragmented and/ or highly abraded state of the bulk of the assemblage its research potential is limited. The single priority is fabric analysis. The reasons for this are two-fold. Firstly, the possible overlap between the Tower Bridge Road Late Bronze Age fabrics and pottery traditions belonging to earlier periods may have chronological implications for a number of 'Neolithic/ Early Bronze Age' and mark sites in the vicinity (or *visa versa*), if they too were dated using pottery. For these implications to be fully realized, a detailed characterization of the fabrics would be required. Secondly, a relatively small amount of Late Bronze Age pottery from the immediate area has been characterized in this way, and the Tower Bridge Road assemblage, although small, would add usefully to our overall knowledge of it. For example the fabrics comprising it are mostly sandy, a characteristic usually associated in the Thames Valley with assemblages belonging to the end of the period, and yet the number of fabrics appears to be small, a characteristic more usually associated with assemblages belonging to the beginning of the period. Possibly therefore the full range of fabrics was not brought out by the assessment; or, alternatively, the assemblage may be representative of a peculiarly local fabric suite. No illustrations are called for.

Site code	Context	Coordinates	Fabric/s	Weight in grams	Sherd nos	Date
TWG00	3	N/A	Q	16	5	LIA
	40	N/A	Q	3	1	LIA
	40	N/A	G	5	1	LIA
	584	106/213	MF	32	1	LBA
	584	110/213	MF	6	1	LBA
	584	107/213	CF	23	1	LBA
	584	104/212	CF	9	1	LBA
	584	103/212	FF	1	1	LBA
	584	107/219	CF	3	3	LBA
	584	110/211	U	2	1	LBA
	584	102/114	G	1	1	See text
	584	100/215	G	1	1	See text
	584	100/215	V	1	1	See text
	584	109/207	MF	6	5	LBA
	584	109/211	MF	3	1	LBA
TBA03	1060	N/A	MF	30	2	LBA
	1060	110/206	MF	1	2	LBA
	1083	118/207	MF	29	4	LBA
	703	N/A	MF	1	2	LBA
TBB03	1577	N/A	V1	9	1	See text
	1577	N/A	MF	9	7	LBA
	1577	N/A	U	1	1	See text
	1925	N/A	V	8	2	See text
TOTAL				200	46	

Table 1: Prehistoric Pottery Spot Dating

APPENDIX 5

ASSESSMENT OF THE ROMAN POTTERY

James Gerrard

INTRODUCTION

Excavations at Tower Bridge Road (Sites TWG00 and TBB03) recovered 188 sherds of pottery from 23 contexts. This material was, without exception, extremely poorly preserved and in many instances survived only as tiny abraded pellets. The majority of assemblages were very small in size (1-30 sherds) with two contexts containing medium sized assemblages (30-100 sherds).

METHODOLOGY AND RECORDING

The methodology used for recording this ceramic assemblage is based on the scheme proposed by the Museum of London Specialist Services and widely used in London and its immediate hinterland (Symonds 2002). The pottery fabrics have been recorded using Museum of London form and fabric codes. The pottery has been quantified using the standard measures of sherd count, weight and all data has been recorded directly into a database. The database design is that used by mediaeval and post-mediaeval pottery specialists within Pre-Construct Archaeology (with some variation) and is ultimately based on standards established by the Museum of London's Archaeology and Specialist Services (Symonds 2002).

SITE TWG00

This site produced 3 sherds of pottery from two contexts. A single ribbed amphora handle from [340] requires further specialist identification.

Context	Date Range	Size	Comments
340	100-150	S	4CU11 with curved flange. Also unid. AMPH
390	50-160	S	2G storage jar

Table 1: Roman Pottery from TWG00

SITE TBB03

This site produced 164 sherds from sixteen contexts. Much of the material was highly abraded and this seems to have been the product of adverse ground conditions. Large fragments of a VCWS flagon and a BB2 4H bowl were recovered from [1918]. They are, however, in such a poor state of preservation that any attempt to remove them from their soil blocks would lead to disintegration.

The assemblage indicates that it was during the early Roman period when most of the activity took place, with just a few indication of later Roman (AD250+) activity. There are some imported

sherds and these include small fragments of the ubiquitous Baetican (BAET) olive oil amphorae and a fragment from an NFSE *mortarium*. Neither is out of place in London.

Context	Date Range	Size	Comments
1154	120-250	S	
1263	50-400	S	
1467	240-300	S	
1471	90-200	S	
1533	50-400	S	
1539	250-350	S	
1555	250-400	S	
1560	50-400	S	
1566	110-400	S	
1575	50-200	S	
1577	150-200	M	
1825	50-250	S	
1903	150-400	S	
1918	120-200	M	BB2 4H bowl, VCWS flagon, v fragile still in soil blocks.
1922	50-160	S	
1929	70-200	S	

Table 2: Roman Pottery from TBB03

RECOMMENDATIONS

The pottery does not warrant a 'pottery report' in the publication. The information contained in this report can be integrated with the stratigraphic discussion and the archive should be signposted in the publication text. If it is deemed necessary then the following sherds could be illustrated:

TBB03 [1467], OXWW 7M17 mortarium rim.

TBB03 [1918], BB2 4H bowl

TBB03 [1555], BB1 4M bowl

REFERENCE

Symonds, R. 2002 *Recording Roman pottery: a description of the methodology used at Museum of London Specialist Services (MoLSS) and Museum of London Archaeology Service (MoLAS)* (Unpublished document available from MoLSS).

APPENDIX 6

ASSESSMENT OF THE POST-ROMAN POTTERY

Berni Sudds and Chris Jarrett

INTRODUCTION

A number of excavations have taken place at 169 Tower Bridge Road and were given different site codes, this assessment report considers the sites with relevant material, TBA03, TBB03 and TWG00. Consecutive context numbers were assigned to each site and run as follows: TWG00; contexts [1]-[726], TWA03; contexts [750]-[1127] and TBB03; contexts [1150]-[1930].

QUANTITY

Total number of boxes: 48 boxes.

Total sherd count: 2704 sherds (1732 vessels).

Total number of contexts producing pottery: 271 contexts.

METHODOLOGY

The Museum of London Archaeology Specialist Service's pottery type codes have been used to classify the ceramics. The material was quantified for each context by fabric, vessel form and decoration using sherd count (with fresh breaks discounted) and estimated vessel numbers (MNV's). Examples of the fabrics can be found in the archives of PCA and/or the Museum of London. A ceramic database cataloguing these attributes has been generated using Microsoft Access.

CONDITION OF THE POTTERY

The state of the pottery is variable but the majority is in a good condition with a number of complete or semi-complete profiles. Continued use of the site has given rise to a quantity of residual material although the majority of groups are considered to have been recovered from primary deposits.

PHASING

A list of provisional dates for the pottery within the contexts is provided in Appendix 1 to this pottery report. The **Date range** is the earliest date for the earliest material within the context and the latest date of the latest material in the context. The **Latest Date** is the range for the latest dated pottery type and the **Deposition Date** is the suggested date of deposition for the pottery in the context. Also noted is the number of sherds present in each context (**Size**). Groups are determined as (S)mall (1-30 sherds), (M)edium (31-100 sherds) or (L)arge (over 100 sherds).

THE POTTERY

Medieval

The small assemblage of medieval pottery amounts to 27 sherds. The pottery types (see Table 1) can be well paralleled in London and include both local and regional products from London and Surrey. The majority dates to between the 12th to mid 14th century, comprised largely of eighteen sherds of London-type ware (LOND), dated 1080-1350 and two sherds of coarse London-type ware (LCOAR), dated 1080-1200 and mostly in the identifiable form of jugs. Two Surrey whiteware fabrics are identified, firstly with four sherds of Kingston-type ware (KING), dated in London to between 1240-1350 and which represent jugs. There is one sherd of Cheam ware, dated 1350-1500. A jar fragment of Surrey greyware is dated 1150-1300. One other unidentified shell-tempered fabric is found in the form of a jar with a squared rim.

Fabric code	Expansion	Date range		SC	MNV
CHEA	Cheam whiteware	1350	1500	1	1
KING	Kingston-type ware	1240	1400	4	4
LCOAR	Coarse London-type ware	1080	1200	2	2
LIMP	Limpfield-type ware	1150	1300	1	1
LOND	London-type ware	1080	1350	19	17

Table 1: Medieval pottery

Post-medieval

The post-medieval pottery types are shown in Table 2. The ratio of local to regional products is fairly typical for the early post-medieval period in London. The three most dominant pottery types, each accounting for a roughly equal quantity, are the local redwares, the local tin-glazed wares and the regional Surrey / Hampshire border wares. Given the Thames-side location of the site and proximity of the docks both the source and relatively high quantity of imported material is not considered unusual. The pottery types are discussed according to their source.

Fabric code	Expansion	Date range		SC	MNV
AGAT MAR	Marbled agate ware	1760	1900	1	1
ANDCO	Andalusian coarseware	1700	1800	1	1
BEAU1	Beauvais single sgraffito ware	1500	1630	1	1
BORD	Surrey-Hampshire border whiteware	1550	1700	1	1
BORD MARB	Surrey-Hampshire border whiteware with marbled decoration	1550	1700	2	1
BORDB	Surrey-Hampshire border whiteware with brown glaze	1620	1700	12	10
BORDG	Surrey-Hampshire border whiteware with green glaze	1550	1700	85	71
BORDG CHP2	Surrey-Hampshire border green-glazed whiteware flat-rimmed chamber pot	1650	1750	35	7
BORDO	Surrey-Hampshire border whiteware with olive glaze	1550	1700	20	14
BORDY	Surrey-Hampshire border whiteware with clear (yellow) glaze	1550	1700	72	59

Fabric code	Expansion	Date range		SC	MNV
BORDY SL	Surrey-Hampshire border whiteware with clear yellow glaze and slip decoration	1550	1700	4	2
CHPO BW	Chinese blue and white porcelain	1590	1900	25	20
CHPO IMARI	Chinese Imari porcelain	1680	1900	1	1
CHPO ROSE	Chinese porcelain with famille rose decoration	1720	1800	13	7
CPM64	CAT: N/W Kent fine calcareous ware	1550	1725	2	1
CREA	Creamware	1740	1830	53	19
CREA DEV	Creamware with developed pale glaze	1760	1830	33	21
CREA TORT	Creamware with tortoiseshell glaze	1740	1770	1	1
DERBS	Derbyshire stoneware	1700	1900	3	3
DTGW	Dutch tin-glazed ware	1512	1800	6	1
DUTR	Dutch red earthenware	1300	1650	17	17
DUTSD	Dutch slip-decorated red earthenware, N.B. M: (Utrecht-type)	1400	1550	1	1
DUTSG	Dutch red earthenware with sgraffito decoration	1480	1550	1	1
EBORD	Early Surrey-Hampshire border whiteware	1480	1550	1	1
ENGS	English stoneware	1700	1900	4	3
ENGS BRST	English stoneware with Bristol glaze	1830	1900	1	1
ENPO HP	English hard paste porcelain	1780	1900	1	1
FREC	Frechen stoneware	1550	1700	58	51
FREC INSCR	Frechen stoneware inscribed band jug	1550	1580	1	1
LONS	London stoneware	1670	1926	182	81
LUST	Lustreware	1805	1900	3	1
MART3	Martincamp-type ware type III flask (red earthenware)	1600	1650	2	1
METS	Metropolitan slipware	1630	1700	30	22
MLOJ	Montelupo oil jar	1800	1900	1	1
MLTG	Montelupo polychrome maiolica	1500	1700	1	1
MORAN	Midlands orange ware (oxidised Midlands purple ware)	1480	1820	2	2
MPUR	Midlands purple ware	1400	1750	37	25
NIMS BICR	North Italian bichrome marbled slipware	1600	1750	1	1
NIMS POLY	North Italian polychrome slipware	1600	1750	3	1
NOTS	Nottingham stoneware	1700	1800	3	3
OLIV	Spanish olive jar	1550	1750	1	1
PEAR	Pearl ware	1770	1840	1	1
PEAR BW	Pearl ware with under-glaze blue painted decoration	1770	1840	8	4
PEAR TR	Pearl ware with under-glaze transfer-printed decoration	1770	1840	7	6
PMBL	Post-medieval Essex black-glazed redware	1580	1700	27	19
PMFR	Post-medieval fine redware	1580	1700	80	57
PMFRB	Post-medieval fine redware with brown glaze	1580	1700	2	2
PMIR	London-area post-medieval iron-rich redware	1600	1800	1	1
PMR	London-area post-medieval redware	1580	1900	609	408
PMRE	London-area early post-medieval redware	1480	1600	49	47
PMSR	London-area post-medieval slipped redware	1480	1650	1	1
PMSRG	London-area post-medieval slipped redware with green glaze	1480	1650	20	20
PMSRY	London-area post-medieval slipped redware with clear (yellow) glaze	1480	1650	25	24
RAER	Raeren stoneware	1480	1610	8	8

Fabric code	Expansion	Date range		SC	MNV
RBOR	Surrey-Hampshire border redware	1550	1900	166	78
RBORB	Surrey-Hampshire border redware with brown glaze	1580	1800	47	28
RBORG	Surrey-Hampshire border redware with green glaze	1580	1800	15	14
RBORSL	Surrey-Hampshire border redware with slip-trailed decoration	1580	1800	17	11
REFW	Plain refined white earthenware	1805	1900	4	3
REFW CHROM	Refined white earthenware with under-glaze painted decoration ('chrome colours')	1830	1900	3	1
REFW PNTD	Refined whiteware with under-glaze painted decoration	1805	1900	7	1
REFW SPON1	Refined white earthenware with cut-out sponged decoration	1830	1900	1	1
SIEG	Siegburg stoneware	1300	1630	2	2
SPAM	Merida-type micaceous ware	1270	1650	1	1
STBL	Staffordshire-type black-glazed ware	1740	1780	1	1
STBRS	Staffordshire-type brown salt-glazed stoneware	1690	1730	3	2
STCO	Staffordshire-type coarseware	1650	1800	1	1
STEM	Staffordshire-type embossed flatware	1650	1750	2	1
STMO	Staffordshire-type mottled brown-glazed ware	1650	1800	8	7
STSL	Combed slipware	1660	1870	21	15
SUND	Sunderland-type coarseware	1800	1900	1	1
SWSG	White salt-glazed stoneware	1720	1780	49	35
SWSG SCRB	White salt-glazed stoneware with scratch blue decoration	1740	1780	24	2
SWSG SPRG	White salt-glazed stoneware with sprigged decoration	1740	1780	1	1
SWSL	Dipped white salt-glazed stoneware	1710	1760	19	11
TGW	English tin-glazed ware	1570	1846	276	220
TGW A	Tin-glazed ware with external lead glaze/Wan Li/blue/yellow decoration (Orton type A)	1612	1650	1	1
TGW B	Tin-glazed ware with manganese-mottled glaze (Orton type B)	1630	1680	4	3
TGW BISC	Biscuit-fired tin-glazed ware	1570	1846	70	59
TGW BLUE	Tin-glazed ware with plain pale-blue glaze	1630	1846	22	6
TGW C	Tin-glazed ware with plain white glaze (Orton type C)	1630	1846	163	34
TGW D	Tin-glazed ware with external lead glaze/polychrome painted (Orton type D)	1630	1680	58	27
TGW E	Tin-glazed ware with 'Persian blue' decoration (Orton type E)	1680	1710	2	2
TGW F	Tin-glazed ware with 'Chinaman among grasses' decoration (Orton type F)	1670	1690	5	4
TGW G	Tin-glazed ware with 'Lambeth polychrome' decoration (Orton type G)	1701	1711	15	8
TGW H	Tin-glazed ware with pale blue glaze and dark blue decoration (Orton type H)	1680	1800	4	1
TGW IMP				1	1
TGW SPNG	Tin-glazed ware with sponged decoration	1700	1760	10	5
TPW	Transfer-printed refined whiteware	1780	1900	15	11
TPW FLOW	Transfer-printed refined whiteware with 'flow blue' decoration	1830	1900	1	1
TPW3	Transfer-printed refined whiteware with brown or black decoration (type 3)	1810	1900	2	2
TPW4	Transfer-printed refined whiteware with new colour decoration (type 4)	1825	1900	3	3
TPW6	Transfer-printed refined whiteware with under-glaze printed and	1840	1900	1	1

Fabric code	Expansion	Date range		SC	MNV
	overglaze painted decoration (type 6)				
VERW	Verwood ware	1600	1900	1	1
WERR	Werra slipware	1580	1650	1	1
WESE	Weser slipware	1580	1630	3	3
WEST	Westerwald stoneware	1590	1900	5	5
WEST CHP2	Westerwald stoneware chamber pot with flanged rim	1740	1760	7	2
WEST PURP	Westerwald stoneware with purple and blue decoration	1665	1750	14	3
WROT	Wrotham slipware	1620	1750	1	1
XX	Miscellaneous unsourced post-medieval wares	900	1900	18	16
XXIMP	Miscellaneous unsourced imported post-medieval wares	900	1900	1	1
YELL	Yellow ware	1820	1900	7	6
YELL SLIP	Yellow ware with slip decoration	1820	1900	13	5

Table 2: Post-medieval pottery. SC: sherd counts, MNV's minimum number of vessels.

Local pottery

With the exception of the London stoneware the local post-medieval pottery assemblage is divided fairly equally between redwares and tin-glazed ware. The London area post-medieval redware (PMR) forms are restricted largely to food cooking, preparation and storage, namely pipkins, jars and bowls, but flowerpots and chamber pots are also frequent. Sugar moulds and syrup collecting jars were also notable and would have been used in conjunction with the process of sugar refining. Sugar refining vessels represent frequent finds on riverside sites, favoured for the location of refineries due to the proximity of water required for both the process of manufacture and in the transportation of the raw materials and refined sugar (Brooks 1983, 11). The presence of these vessels does not necessarily imply production on site, particularly given the small number recovered, but may potentially indicate activity of this nature was taking place in the vicinity. The vessels probably date to the 17th and 18th centuries at a time when many small-scale sugar-refining enterprises were operating in London (ibid).

The 16th-century redware (PMRE) and the 1480-1650 dated slipwares (PMSR, PMSRG and PMSRY) also tend to be in forms associated with the kitchen and food production or serving, but there are no industrial vessels found in these wares.

As expected the tin-glaze assemblage includes a high-proportion of tablewares, namely bowls, dishes and plates as well as hygiene wares, chamber pots and ointment pots, dating largely to the 17th and 18th centuries. The decoration is largely plain white (TGW C), but there are also a notable number of biscuit wares, with 70 sherds, as well as kiln furniture, probably derived from local pot houses: Horsley Down, Still Stairs and Pickelherring. Other tin-glazed forms identified include drug jars, porringers an urn and a vase

The stonewares are mostly represented by drinking or storage forms, in the form of jugs and particularly with various 19th-century bottle shapes. An unusual find is a late 19th century barrel shaped tobacco jar decorated with human figures.

South-east England regional pottery

The regional pottery assemblage is dominated by Surrey/ Hampshire border products, post-medieval redwares from Essex and a small number of sherds from Kent. The Surrey/ Hampshire border wares are predominantly red bodied. For their long period of production, they are at their most significant amongst 18th-century finds assemblages, and more notably so in Southwark. There are also brown (RBORB), green (RBORG) and slip decorated versions of the red border ware. Forms usually have kitchen, food serving, preserving or hygiene functions, but rare examples of a bedpan and chicken feeder are also present.

The Surrey-Hampshire border whiteware product is mostly found with either yellow or green glaze (BORDY/G) but brown and olive-glazed wares are also present. Bowl and dish forms are common but tripod pipkins, porringers, a chafing dish, chamber pots, colanders and a moneybox are also represented. There are also rare instances of slip decorated whiteware (BORDY SL) in the form of dishes, but even rarer is a marbled slipware variant (in the form of a rounded dish) that may have been imitating North Italian imported pottery.

The pottery from Essex is comprised of Post-medieval black-glazed redware (PMBL), Post-medieval fine redware (PMFR) and Metropolitan slipware (METS). The black-glazed redware is represented only by jug forms and the fine redware by a broader range, including jugs, bowls, a dish and a pipkin. The Metropolitan slipware forms include bowls or dishes and jugs. Only three sherds of pottery come from Kent in the form of North or West Kent fine calcareous ware (CPM64) and Wrotham slipware, for which the vessel shapes could not be identified. A single sherd of Verwood ware from Hampshire is also present and constitutes an uncommon find in London.

Other British regional pottery

Pottery from the Midlands consists of small quantities of earthenwares; marbled Agate ware (AGAT MARB), blackware (BLACK) and Staffordshire coarse ware (STCO), embossed (STEM) and mottled wares (STMO), but there are larger quantities of industrial finewares: Creamwares (CREA/DEV/TORT) and Pearl wares (PEAR/BW/TR) and stonewares: Midlands Purple ware (MPUR), Nottingham (NOTS), Derbyshire (DERBS) and white salt-glazed stonewares (SWSG/SCRB/SPRG). The earthenwares of a Midlands source are in functional forms for the kitchen or table, where as the industrial finewares shapes are mostly as drinking or tablewares.

The stonewares in this category include functions seen in the earthenwares and the industrial finewares, but additionally include tea wares. Most of this material dates to the 18th and 19th centuries.

Pottery that can be attributed to a number of ceramic production centres in Great Britain comprises earthenwares, industrial finewares, stonewares and porcelain. The industrial finewares consist of 19th-century lustre ware (LUST), refined white earthenwares (REFW/CHROM/PNTD/SPON1) and transfer printed variants of the latter (TPW/FLOW/3/4/6), as well as Yellow ware (YELL/SLIP). Vessel functions include drinking, kitchen, table and occasionally as preservation and storage shapes. The stonewares are generic 19th-century English type (ENGS, ENGS BRST) with storage (bottle), or drinking forms in the early to mid 18th-century dated dipped white salt-glazed stoneware (SWSL). There is one sherd of English porcelain (ENPO HP) and this is in a drinking form.

Imported wares

The main source of imported pottery is from Germany and mainly in the form of stonewares from Frechen (FREC), Raeren (RAER) and Siegburg (SIEG), usually with drinking vessels, but chamber pots also occur with the Westerwald stoneware (WEST/PURP). There are also a small number of German earthenwares from Werra and Weser and these usually occur as tablewares. A small number of French wares are recorded with a Beauvais sgraffito ware dish (BEAU1) and a Martincamp ware flask (MART3). The second largest source of imported pottery is from the Low Countries and includes Dutch redware (DUTR) and a small amount of slip (DUTSD) and sgraffito decorated (DUTSG) wares and their forms are usually for the table. A tin-glaze (DTGW) plate is also present. Pottery from Italy is restricted to a Montelupo tin-glazed ware (MLTG) bowl and an oil jar (MOLJ), besides North Italian marbled slipware (NIMS BICR/POLY) as a bowl and a closed form. Spanish wares are in the form of containers as Andalusian coarse ware (ANDCO) and an Olive jar (OLIV). From Portugal there is also a sherd of Merida-type micaceous ware (SPAM), possibly derived from Melado. There are also a number of uncommon earthenwares and a tin-glazed ware that are probably imports which would require further identification.

DISCUSSION OF POTTERY BY PHASE

The material recovered ranges in date from the 11th to 20th centuries although activity cannot be demonstrated to be continuous. The earliest post-Roman activity possibly dates to the late 11th or 12th century, although the medieval assemblage is small and dispersed. The bulk of the assemblage dates from the mid-late 16th century onwards, with the majority of groups dated to the 17th and 18th century.

Phase	Total sherd count	Minimum number of vessels
+	75	33
3	3	3
8	14	13
8-9	6	6
9	79	72
10	112	99
11	868	523
12	1176	744
13	222	148
14	130	74
15	25	23

Table 3: Breakdown of the assemblage by phase

Phase 3: Neolithic/ Bronze Age

Context: [584]

Three sherds of intrusive post-medieval pottery were recorded for this phase with a whiteware (BORDG) and two redware sherds (PMFR and PMR).

Phase 8: 4th – 15th century

Contexts: [1154], [1577] and [1925]

Thirteen sherds of post-Roman pottery were recovered from this phase mostly with London-type ware (LOND) jugs, but two sherds of this form occur in Kingston-type ware. The only jar-shaped vessel is recorded in an unidentified shell-tempered ware fabric. The contexts the pottery was recovered from are water lain deposits.

Phase 8-9: 4th – 16th century

Context: [1471]

Of the six sherds of pottery in this phase, all but one fragment is in London-type ware and in the form of jugs. The other sherd is in Kingston-type ware (KING). The pottery was recovered from a water lain deposit.

Phase 9: 15th – 16th century

Contexts: [454], [463], [466], [472], [478], [506], [529], [534], [536], [538], [559], [563], [575], [577], [583], [1011], [1013], [1118], [1471], [1494], [1823] and [1825]

From Phase 9 there are 76 sherds of pottery and the main source is local with 46% by sherd count and mainly in the form of the coarse red earthenware (PMRE) and its slipware variant (PMSR/G/Y) and the later development: PMR. 20% of the pottery is from the Surrey-Hampshire borders as the whiteware BORDB/G/O/Y and its slipware variant (BORDY SL). Imported pottery

accounts for 9% and this is mostly in the form of stonewares from Frechen, Raeren and Siegburg. There is also a sherd of French Beauvais single sgraffito ware. Essex wares (PMBL and PMFR) account for 8% and Midlands wares for 3% with MPUR and an intrusive sherd of Derby stoneware (DERBS). Functionally the pottery is mostly concerned with food preparation or serving (13% by MNV's), then multifunctional (7%) followed by drink serving wares. Only 3% of the vessel shapes have a cooking function and there are single examples of alcohol or food consumption vessels.

Pottery in this phase was mostly derived from alluvial layers and ditch fills and its condition was generally fragmentary.

Phase 10: 16th – 17th century

Contexts: [363], [402], [425], [333], [440], [441], [456], [457], [462], [485], [499], [508], [512], [514], [515], [528], [569], [1031], [1721] and [1725].

Of the 112 sherds of the pottery from this phase, 54% is of a local source and mostly in the form of redware PMR, whilst six sherds comprise tin-glazed biscuit ware (TGW BISC) which probably derive as refuse from the local pothouses. The Surrey-Hampshire border wares represent 24% of this group, mostly in the form of whitewares; the redware (RBOR) first appears in this phase with 3% and includes green-glazed wares. Essex wares account for 10% and besides PMBL and PMFR also include Metropolitan slipware (METS). Imported pottery constitutes 16%, mostly with stonewares particularly from Frechen (including a rounded mug with applied stamped lion masks), with smaller amounts from Raeren and the Westerwald and an earthenware dish in Werra ware. Dutch redware is also present, but only in the form of a chafing dish, while French pottery is represented by a red earthenware Martincamp flask (MART3). Chinese porcelain (CHPO BW) first appears in this phase with a tea bowl decorated with a repeating flaming pearl motif. Two sherds from the Midlands are a purple stoneware (MPUR) example and a white stoneware (SWSG) piece, the latter probably being intrusive.

Functionally the pottery is mostly concerned with food preparation and serving uses (13% by MNV's), whilst multifunctional and drink serving forms account each for 3% and cooking, drink and tea consumption account for 2% each.

The sizes of pottery groups found in this phase are small (under 30 sherds) and the types of deposits represented dump layers, ditch fills and a small number of pit features.

Phase 11: 17th – 18th century

Contexts: [361], [370], [387], [388], [391], [393], [395], [397], [405], [407], [416], [426], [428], [860], [989], [990], [991], [996], [1000], [1007], [1036], [1038], [1102], [1211], [1213], [1215], [1223], [1263], [1269], [1287], [1415], [1457], [1475], [1481], [1506], [1747], 1754, [1755], [1768], [1794], [1796], [1798], [1805], [1829], [1830], [1831], [1832], [1834], [1835], [1836], [1837], [1838], [1839], [1843], [1846], [1853], [1854], [1858], [1859], [1860], [1861], [1868], and [1879].

In this phase local pottery continued to be the main source of ceramics with 55% of the total 732 sherds. Post-medieval redware (PMR) constitutes the main fabric type (28%), whilst the London delftwares account for 22%. Surrey-Hampshire border wares were still prominent in this phase with 18% mostly in whiteware. Redware (RBOR) increases during this phase to 6% and includes additionally brown-glazed wares, besides a slipware dish. The Essex redwares represent 12% of the pottery and the slipware (METS) is more frequent than before. Imported pottery decreases from the previous phase to 9% and is mostly from Germany with Frechen stoneware, and there is a single sherd of Weser slipware. Italian wares first appear during this phase in the form of North Italian marbled slipware (NIMS POLY) and Montelupo tin-glazed ware as well as a sherd of Iberian micaceous ware (SPAM). Dutch redware is the main pottery type from the Low Countries, and there is also a sherd of sgraffito-decorated redware (DUTSG). This phase also produced single sherds of imported tin-glaze and an orange micaceous ware that needs further sourcing. Chinese porcelains are represented by three saucer fragments. Pottery from the Midlands also increases in sherd number (6%) compared to the previous phase, notably in the form of Midlands purple ware, including the butter pot form and white stoneware (SWSG). Single sherds of Staffordshire wares (STBL) and STMO occur, besides a sherd of Nottingham stoneware. Industrial finewares such as Creamwares and Pearl ware are also present for the first time, but may be intrusive.

Food preparation or serving wares continued to be the most important functional category for this phase (20% by MNV's) as in the previous phases, while cooking, drink serving and sanitary wares all account for 3% each. Horticultural forms (flower pots), food consumption wares and multifunctional shapes (bowls and lids) each account for 2% of the pottery uses. Industrial vessels in the form of sugar refining wares in PMR first appear in this phase.

The largest quantities of pottery were recovered from dump layers, such as [370] and [860]. Layer [370] is of a mid 17th-century date and includes tin-glaze biscuit wares. The only medium sized groups of pottery found in pits are from fill [361] of pit [930] and back fill [1287] from tanning pit [1288].

Phase 12: 18th century

Contexts: [249], [295], [297], [306], [308], [309], [311], [312], [318], [320], [328], [340], [356], [359], [367], [369], [371], [374], [379], [382], [435], [436], [700], [702], [857], [861], [896], [899], [907], [924], [928], [968], [1164], [1190], [1226], [1248], [1258], [1260], [1277], [1283], [1285], [1292], [1479], [1482], [1486], [1498], [1500], [1665], [1699], [1723], [1744], [1762], [1771], and [1813].

From this phase there are 1310 sherds of pottery, and local ware constitutes 60%, though the local redware (PMR) was no longer the main pottery type, although it still accounts for 23%. The local tin-glazed wares were the most frequent class of pottery for this phase with 31% and mostly occurs in the form of decorative types that cannot be assigned to a decorative code or plain white-glazed wares (TGW C). Seventeen sherds comprise biscuit ware (TGW BISC) from a local source. London stoneware (LONS) first appears during this phase and it accounts for 4% by sherd count. Surrey-Hampshire border wares represents 18%, but the whiteware is less important, whereas the red border wares increase in frequency from the previous phase and account for 12%. Of note is a white border ware with marbled slip decoration (BORD MARB) recovered from context [928] which probably copies North Italian imports. Pottery from a Midlands source also increases to 12%. It is mostly present with white salt-glazed stonewares (SWSG/SCRB/SPRG). Creamwares also form a notable component of the Midland wares but the later Pearl wares are present in smaller numbers.

Imported wares only accounts for 5% of the pottery in this phase and Chinese porcelains are more frequent (2.4%) than in the preceding phase, followed by German stonewares (1.6%), Italian wares include North Italian marbled slipware (NIMS BICR) and an oil jar (MLOJ). Much of the ceramics from the Low Countries is probably residual, except for a plate in tin-glazed ware (DTGW), whilst from Spain there are sherds of Andalusian coarseware (ANDCO) and an olive jar (OLIV). Pottery of a general Great Britain source accounts for 3% of the pottery and is mostly as white slipped stoneware (SWSL) and combed slipware (STSL), besides a small amount of intrusive 19th century material. The redwares from Essex also account for 3% by sherd count, but by c.1700 these wares were no longer being marketed to London, and therefore represent residual items or vessels with a long use life.

Functionally the pottery is mostly concerned with food preparation or serving (18%), followed by food consumption, which reflects the increase in the production of plates and other tablewares during the 18th century, but sanitary wares and teawares are small in number but notable components of the pottery functions in this phase.

There are numerous deposits in this phase that produced pottery, often in sizable groups which derived from the back filling of tanning pits and other cuts. Large groups of pottery were

recovered from dump and levelling layers: [370], [860], [989], [990] and [1832]. A small number of other deposits are worthy of a brief comment. A large quantity of mid 18th-century pottery was found in fill [318] of the large pit [319], whilst fills [328] and [340] of pit [329], containing clay tobacco pipe wasters, also produced an interesting 18th-century ceramic assemblage. Fill [1292] of tanning pit [1293] included a number of intact or near complete vessels in Chinese porcelain, delftware, red border ware and Westerwald stoneware from a large late 18th-century group.

Phase 13: 18th – 19th century

Contexts: [229], [261], [264], [277], [750], [869], [871], [873], [875], [921], [947], [985], [1691] and [1697].

There were only 222 sherds of pottery recorded in this phase and local wares continued to dominate constituting 58% of the material, which is unusual as during this period pottery from the Midlands and elsewhere became more important in the London ceramic profile. London stoneware accounts for 30% of the pottery and there are three bowls, which are unusual finds in this fabric, besides 21 blacking bottles amongst the other forms in this ware. Post-medieval redwares and tin-glazed wares are also important pottery types during this phase. The Surrey-Hampshire border wares account for 13% of the pottery and although contemporary red wares are present, there are also a notable number of residual whitewares. Pottery of a general Great Britain source occurs with 12% in this phase and are mostly represented by industrial finewares: refined whitewares (REFW/CHROM) and transfer printed versions of this fabric (TPW/3), besides Yellow ware (YELL/SLIP). Midlands wares constitute 7% mainly in the form of Creamware (CREA DEV/TORT) and stonewares (MPUR, NOTS and SWSG). Imported pottery accounts for 7% and comes from either China as porcelains or mostly from Germany (5%), but much of the latter is residual.

Functionally there is a change in importance to the uses of the pottery in this phase, with liquid holding forms accounting for 17%, followed by food preparation and serving wares constituting (14%) and food consumption wares representing (6%) as the main categories.

The most notable deposits containing ceramics in this phase were fill [229] of a soak away [230] and fill [750] of a wooden tank, structure [820]. Both features produced unusual or larger than usual amounts of London stoneware.

Phase 14: 19th century

Contexts: [232], [274], [276], [299], [302] [854], [879], [880], [1594], [1650], [1667] and [1851].

Local wares unusually continued to be the main source of pottery during this phase with 66% of the 130 sherds. The local pottery consists mostly of stoneware (LONS) with 39% and mostly in

the form of bottles, whilst the redware (PMR) and the tin-glazed wares, the latter being largely residual, declined in number compared to the previous phase. Pottery of a general Great Britain source accounts for 12% and these wares mostly comprised Refined white earthenware (REFW/PNTD/SPON1) and its transfer-printed versions (TPW/3/4/6). There are also small amounts of combed slipware (STSL), porcelain (ENPO HP), Bristol-glazed stoneware (ENGS BRST) and Yellow ware (YELL). Pottery from the Midlands, constitutes 5% mostly in the form of Creamware, whilst a single imported sherd and most of the Surrey-Hampshire border wares are residual.

Functionally the pottery for the 19th century is more concerned with food consumption (8% by MNV's), then sugar refining (7%), followed by food preparation or serving (5%), teawares and alcohol storage or serving (both 4% each), while drink consumption, drink storage and serving, liquid holding and sanitary wares each account for 3% of the forms.

The most notable deposits for this phase that produced ceramics were fill [232] of drain [285], which produced a London stoneware tobacco jar and fills [879] and [880] of well [878].

Phase 15: 20th century

Contexts: [233] and [236]

Only 25 sherds of pottery were recovered from phase 15 and 36% derives from a British source mostly either in the form of transfer-printed wares or yellow wares, while Midlands wares, represented by Creamware and Pearl ware and local wares and all residual Delftware, each account for 28%, whilst single sherds of Chinese porcelain (CHPO ROSE) and a Westerwald stoneware jug are the only imported wares.

All the tin-glazed wares came from a made ground layer [236] whilst the rest of the pottery came from fill [233] of a masonry soak away [236].

SIGNIFICANCE OF THE ASSEMBLAGE

The pottery is significant at a local level. The pottery derived from both on and off site (dumping) activities. The assemblage reflects the ceramic trends for this area of Southwark as well as that of the city.

RESEARCH AIMS

A number of research aims can be suggested for the post-medieval assemblage as avenues of research.

- Can the material culture of tanners be illuminated upon from the pottery?
- Does the documentary evidence reflect the activities of other professions on or near the area of the site and can the ceramics be related to them?
- How does the pottery assemblage from 169 Tower Bridge Road compare to other sites in the vicinity?
- Can any of the ceramics be related to the vinegar distillery?

RECOMMENDATIONS

Any future publication work should include a report on the medieval and post-medieval pottery recovered. Pottery from previous excavations of the site should also be incorporated in the publication text. Time should be made available for consultation with the Museum of London pottery specialists to identify pottery types that are as yet not sourced. To illustrate the text 37 drawings are recommended (listed in Table 4) in addition to 20 photographic plates.

Fabric	Context	Phase	Form	Comments
BORD MARB	928	12	Dish, rounded	Complete profile, decorated with joggled white slip on red slip.
BORDB	370	11	XX	Unidentified form, possibly a tankard.
BORDG	340	12	Bowl, carinated	Unparalleled form. Carinated open form bowl/ porringer with solid lug handle. The handle is decorated to the top with incised wavy lines and to the edge with triangular notching.
BORDG	340	12	Bowl, carinated	Thin-walled carinated bowl/ cup.
BORDY SL	356	12	Dish, rounded	Complete profile. Rare.
DTGW	328/340	12	Plate	Complete profile
FREC	1285	12	Jug	Anchor medallion with inscription '--EX VAN?UL--'.
FREC	425	10	Mug, rounded	Complete profile, cylindrical neck with applied stamped lion-mask.
LONS	1292	12	Jar, rounded	Complete profile
LONS	232	14	Tobacco jar	Large size tobacco jar decorated with figures.
METS	387	11	Dish, rounded	Near Complete profile
METS	363	10	Dish, small rounded	Complete profile
PMR	361	11	Bird pot	Base with cut out
PMR	328	12	Cup	Base sherd
PMR	370	11	Dish, rounded	Broad rim, internally stepped
PMR	328/340	12	XX	Unidentified form decorated with horizontal combing.
PMR	340	12	XX	Unknown form. Base sherd with hole in the wall.
PMRE	367	12	Bowl	Rim, unparalleled form
RBOR SL	340	12	Dish, rounded	Complete profile, possible lettering or motif at the centre of the base
RBOR SL	989	11	Dish, small flared	Broad rim sherd decorated with clusters of white slip dots. Unparalleled.
RBOR SL	1164	12	Dish, small flared	Complete profile
RBORB	928	12	Bedpan	Complete profile

Fabric	Context	Phase	Form	Comments
SIEG	1830	11	XX	Body sherd with stamped or mould decoration
STMO	928	12	Bowl, concave sided	Complete profile
SWSG	1292	12	Jug, rounded	Complete profile
SWSG SCR B	1292	12	Chamber pot	Near complete. Decorated with a GR and crown medallion
SWSL	928	12	Tankard	Body and base sherd with rouletted and brown slip decoration
TGW	1287	11	Dish	Finely painted landscape/maritime scene.
TGW	370	11	Dish, fluted	Complete profile.
TGW	382/435	12	Plate	Unusual simple plate shape with scroll and foliate design.
TGW	356/371	12	Plate	Unusual simple plate shape with bird and floral design
TGW	382	12	Plate	Unusual simple plate shape with foliate design.
TGW	435	12	Plate, type I	Complete profile with Chinese style motifs on the rim and central floral design.
TGW C	340	12	Ointment pot	Complete profile with a shallow bowl
TGW IMP	996	11	Dish	Complete profile, decorated with panelled fruit design in Chinese-European style. Possibly Dutch.
WEST CHP2	1292	12	Chamber pot, type 2	Complete profile, decorated with applied griffin medallion.
WEST PURP	860/845	11	Jug, rounded	Body sherds decorated with a 'WR' and crown medallion

Table 4. List of vessels requiring illustration for the publication.

Additionally group photographs are recommended for the ceramics from contexts [1292]

REFERENCES

- Grainger, I. 2000, 'Excavations at Battle Bridge Lane in 1995, medieval and early post-medieval development along Tooley Street, Southwark' Surrey Archaeological Collections, 87, 2-46.
- Jarrett, C. 1999, 'The pottery' in D. Killock, 'Late medieval and post-medieval developments at 100-104 Bermondsey Street, Southwark'. Surrey Archaeological Collections, 86, 134-7.
- Killock, D. 1999 'Late medieval and post-medieval developments at 100-104 Bermondsey Street, Southwark'. Surrey Archaeological Collections, 86, 125- 140.
- Stephenson, R. 2000, 'The pottery' in I. Grainger, 'Excavations at Battle Bridge Lane in 1995, medieval and early post-medieval development along Tooley Street, Southwark' Surrey Archaeological Collections, 87, 22-27.

APPENDIX 1: Pottery spot dates by context

Site code	Context	Sherd count	Date range of the pottery		Latest dated ware		Suggested date of deposition
TWG00	229	41	1550	1926	1830	1926	1852 - 1860
TWG00	231	11	1570	1926	1770	1840	1770 – 1800/40
TWG00	232	25	1570	1926	1830	1900	Late 19 th century
TWG00	233	19	1570	1900	1825	1900	1825 - 1840
TWG00	236	6	1570	1846	1630	1846	1630 – 1846
TWG00	249	40	1300	1926	1670	1926	Late 17 th – early 18 th century
TWG00	261	15	1550	1900	1612	1650	1612 – 1650
TWG00	264	27	900	1900	1780	1900	Mid – late 19 th century
TWG00	274	1	1580	1900	1580	1900	1580 – 1900
TWG00	276	10	1550	1900	1580	1900	Late 16 th – 17 th century
TWG00	277	2	1580	1900	1680	1900	1680 – 1900
TWG00	295	21	1550	1926	1760	1830	1760 – 1830
TWG00	297	29	900	1900	1670	1690	1670 – 1700
TWG00	299	20	1670	1926	1805	1900	Early 19 th century
TWG00	302	11	1550	1926	1770	1840	1770 – 1840
TWG00	306	1	1580	1900	1580	1900	1580 – 1900
TWG00	308	6	1580	1926	1760	1830	1760 – 1830
TWG00	309	1	1570	1846	1570	1846	Late 17 th – early 18 th century
TWG00	311	12	1400	1900	1580	1900	1580 – 1700
TWG00	312	52	1550	1926	1740	1760	1740 – 1760
TWG00	318	142	1550	1926	1820	1900	1760 – 1780 (x 1 intrusive 19 th century)
TWG00	320	53	900	1926	1780	1900	1740 – 1760 (x1 intrusive 19 th century)
TWG00	328	35	1512	1926	1770	1840	1770 – 1800
TWG00	340	62	1400	1900	1700	1800	1700 – 1800
TWG00	356	29	1550	1900	1630	1846	Mid 18 th century
TWG00	359	3	1550	1900	1570	1846	1570 – 1846
TWG00	361	41	1570	1900	1770	1840	1770 – 1830
TWG00	363	4	900	1900	1630	1700	1630 – 1700
TWG00	366	14	1300	1900	1580	1900	1580 – 1630
TWG00	367	2	900	1900	1480	1600	1480 – 1800
TWG00	369	18	1300	1900	1580	1900	1580 – 1600/50
TWG00	370	204	900	1900	1670	1690	1670 – 1700
TWG00	371	23	1550	1900	1825	1900	1720 – 1760 (x2 intrusive 19 th century)
TWG00	374	1	1570	1846	1570	1846	1570 – 1846
TWG00	379	15	1570	1900	1830	1900	1830 – 1850/1900
TWG00	382	20	1550	1900	1720	1780	Mid 18 th century
TWG00	387	5	1300	1900	1630	1700	1630 – 1650
TWG00	388	18	1480	1900	1630	1680	1630 – 1700
TWG00	391	1	1550	1700	1550	1700	1550 – 1700

Site code	Context	Sherd count	Date range of the pottery		Latest dated ware		Suggested date of deposition
TWG00	393	6	1480	1900	1650	1750	1650 – 1750
TWG00	395	1	1630	1680	1630	1680	1630 – 1680
TWG00	397	1	1580	1700	1580	1700	1580 – 1700
TWG00	402	7	1300	1900	1720	1780	1720 – 1780
TWG00	405	5	1550	1846	1600	1750	1600 – 1700
TWG00	407	4	1480	1900	1680	1710	1680 – 1710
TWG00	416	17	1550	1900	1580	1900	1805 – 1900
TWG00	425	8	1300	1900	1620	1700	1620 – 1650
TWG00	426	4	1550	1926	1670	1926	1670 – 1700
TWG00	428	1	1570	1846	1570	1846	1570 – 1846
TWG00	433	5	1480	1900	1630	1700	1630 – 1650
TWG00	435	20	1400	1926	1720	1780	1720 – 1750
TWG00	436	3	1550	1700	1550	1700	1550 – 1700
TWG00	440	2	1550	1700	1550	1700	1550 – 1700
TWG00	441	2	1580	1900	1620	1700	1620 – 1700
TWG00	454	1	1620	1700	1620	1700	1620 – 1700
TWG00	456	7	1300	1900	1580	1900	1580 – 1650
TWG00	457	10	900	1900	1630	1680	1630 – 1650
TWG00	462	23	1480	1900	1620	1700	1620 – 1650
TWG00	463	1	1300	1630	1300	1630	1300 – 1630
TWG00	466	1	1480	1600	1480	1600	1480 – 1600
TWG00	472	7	1480	1900	1580	1900	1580 – 1610
TWG00	478	2	1480	1700	1550	1700	1550 – 1600
TWG00	485	1	1580	1700	1580	1700	1580 – 1700
TWG00	499	12	900	1900	1580	1900	1580 – 1700
TWG00	506	1	1580	1900	1580	1900	1580 – 1900
TWG00	508	4	1550	1900	1580	1900	1580 – 1700
TWG00	512	3	1550	1700	1600	1650	1600 – 1650
TWG00	514	1	1580	1700	1580	1700	1580 – 1700
TWG00	515	3	1300	1650	1480	1650	1480 – 1700
TWG00	528	11	1480	1900	1580	1900	1580 – 1700
TWG00	529	5	900	1900	1480	1650	1480 – 1600
TWG00	534	1	1480	1600	1480	1600	1480 – 1600
TWG00	536	3	900	1900	1580	1900	1580 – 1700
TWG00	538	1	1580	1900	1580	1900	1580 – 1900
TWG00	559	3	1480	1700	1550	1700	1550 – 1630
TWG00	563	2	1580	1900	1580	1900	1580 – 1900
TWG00	569	5	1570	1900	1590	1900	1590 – 1846
TWG00	575	1	1550	1700	1550	1700	1550 – 1700
TWG00	577	1	1550	1700	1550	1700	1550 – 1700
TWG00	583	1	900	1900	900	1900	1480 – 1900
TWG00	584	3	1550	1900	1580	1900	1580 – 1700
TWG00	700	4	1480	1900	1630	1680	1630 – 1650
TWG00	702	4	1300	1900	1580	1900	1580 – 1650

Site code	Context	Sherd count	Date range of the pottery		Latest dated ware		Suggested date of deposition
TBA03	750	59	1580	1926	1820	1900	1820 – 1900
TBA03	854	8	1550	1900	1630	1846	1630 – 1700
TBA03	857	13	1550	1900	1760	1830	1760 – 1800
TBA03	860	93	1300	1926	1670	1926	1689 – 1700
TBA03	861	3	1580	1900	1580	1900	1580 – 1700
TBA03	869	4	1400	1900	1580	1900	1580 – 1700
TBA03	871	15	1480	1900	1620	1700	1620 – 1650
TBA03	873	5	1570	1846	1760	1830	1760 – 1770
TBA03	875	25	1550	1900	1665	1750	1665 – 1700
TBA03	879	11	1550	1926	1780	1900	1780 – 1830
TBA03	880	28	1670	1926	1840	1900	Mid 19 th century
TBA03	896	8	1550	1900	1630	1700	1630 – 1700
TBA03	899	12	1480	1900	1580	1900	Late 17 th – 18 th century
TBA03	907	4	1550	1846	1580	1700	1580 – 1600
TBA03	921	4	1580	1900	1630	1700	1630 – 1700
TBA03	924	5	1550	1900	1580	1900	1580 – 1900
TBA03	928	407	900	1926	1740	1780	1740 – 1750
TBA03	941	7	1550	1900	1580	1900	1580 – 1700
TBA03	947	1	1580	1900	1580	1900	1580 – 1900
TBA03	968	11	1480	1900	1580	1900	1580 – 1700
TBA03	985	4	1550	1900	1580	1900	1580 – 1700
TBA03	989	38	1080	1926	1710	1760	1710 – 1760
TBA03	990	13	1270	1926	1670	1926	1670 – 1700
TBA03	991	15	1570	1900	1620	1700	1620 – 1700
TBA03	996	15	1480	1900	1580	1900	1600 – 1800
TBA03	1000	2	1480	1600	1480	1600	1480 – 1600
TBA03	1007	1	1580	1900	1580	1900	1580 – 1900
TBA03	1011	10	1480	1650	1480	1650	Mid – Late 16 th century
TBA03	1013	2	1150	1600	1480	1600	1480 – 1600
TBA03	1031	1	1480	1600	1480	1600	1480 – 1600
TBA03	1036	1	1630	1700	1630	1700	1630 – 1700
TBA03	1038	2	1550	1700	1580	1700	Late 16 th century
TBA03	1102	3	1480	1900	1580	1900	1580 – 1600
TBA03	1118	1	1480	1600	1480	1600	1480 – 1600
TBB03	1153	2	1550	1700	1550	1700	1550 – 1700
TBB03	1154	3	900	1900	1080	1350	1080 – 1200
TBB03	1164	39	1550	1926	1710	1760	Early – Mid 18 th century
TBB03	1190	8	1550	1900	1580	1800	1580 – 1800
TBB03	1211	1	1580	1700	1580	1700	1580 – 1700
TBB03	1213	2	1550	1900	1580	1900	1580 – 1700
TBB03	1215	21	1570	1900	1630	1680	Early – Mid 18 th century
TBB03	1223	8	1570	1900	1630	1846	1700 – 1720
TBB03	1226	2	1580	1900	1740	1830	1740 – 1830
TBB03	1248	2	1580	1900	1580	1900	1580 – 1900

Site code	Context	Sherd count	Date range of the pottery		Latest dated ware		Suggested date of deposition
TBB03	1258	3	1570	1900	1720	1780	1720 – 1780
TBB03	1260	2	1580	1900	1590	1900	c. 1750 – 1765
TBB03	1263	1	1480	1600	1480	1600	1480 – 1600
TBB03	1269	1	1480	1650	1480	1650	1480 – 1650
TBB03	1275	41	1550	1900	1580	1900	1650 – 1750
TBB03	1277	1	1800	1900	1800	1900	1800 – 1900
TBB03	1283	2	1570	1900	1580	1900	18 th century
TBB03	1285	12	1300	1900	1630	1846	Early – Mid 18 th century
TBB03	1287	33	1400	1926	1760	1830	1760 – 1780
TBB03	1292	134	1550	1926	1770	1840	1770 – 1780
TBB03	1415	1	1400	1750	1400	1750	1400 – 1750
TBB03	1457	1	1570	1846	1570	1846	17 th century
TBB03	1471	6	1080	1400	1240	1400	1240 – 1350
TBB03	1475	2	900	1900	900	1900	1500 – 1700
TBB03	1479	1	1580	1900	1580	1900	1580 – 1900
TBB03	1481	20	1550	1900	1720	1800	1720 – 1780
TBB03	1482	3	1550	1900	1570	1846	1570 – 1700
TBB03	1486	15	1550	1926	1670	1926	1670 – 1700
TBB03	1494	1	1700	1900	1700	1900	1700 – 1900
TBB03	1498	2	1580	1926	1670	1926	1670 – 1900
TBB03	1500	1	1580	1900	1580	1900	1580 – 1900
TBB03	1506	1	1570	1846	1570	1846	Late 17 th – Early 18 th century
TBB03	1577	1	1080	1350	1080	1350	1080 – 1350
TBB03	1594	8	1580	1900	1580	1900	1600 – 1900
TBB03	1650	4	900	1900	1580	1900	1580 – 1650
TBA03	1665	3	1580	1900	1580	1900	1580 – 1800
TBB03	1667	3	1550	1846	1570	1846	17 th century
TBA03	1691	7	1570	1926	1720	1780	1720 – 1780
TBB03	1697	13	1080	1900	1810	1900	1810 – 1900
TBB03	1699	6	1550	1900	1580	1900	1580 – 1700
TBB03	1721	2	1480	1700	1550	1700	1550 – 1650
TBB03	1723	1	1570	1846	1570	1846	1570 – 1846
TBB03	1725	1	1080	1350	1080	1350	1080 – 1350
TBB03	1744	6	1550	1926	1670	1926	1670 – 1750
TBB03	1747	3	1480	1700	1550	1700	1550 – 1600
TBB03	1754	1	1550	1700	1550	1700	1550 – 1700
TBB03	1755	1	1630	1700	1630	1700	1630 – 1700
TBB03	1762	6	1480	1900	1740	1830	1740 – 1830
TBB03	1768	1	1630	1700	1630	1700	1630 – 1700
TBB03	1771	1	1570	1846	1570	1846	1570 – 1800
TBB03	1794	1	1550	1700	1550	1700	1550 – 1700
TBB03	1796	8	1400	1846	1630	1700	1630 – 1700
TBB03	1798	2	1480	1700	1580	1700	1580 – 1650
TBB03	1805	7	1550	1846	1570	1846	1570 – 1700

Site code	Context	Sherd count	Date range of the pottery		Latest dated ware		Suggested date of deposition
TBB03	1813	1	1480	1650	1480	1650	1480 – 1650
TBB03	1823	17	1400	1900	1580	1900	1580 – 1600
TBB03	1825	11	1480	1900	1580	1900	1580 – 1600
TBB03	1829	3	1570	1846	1630	1700	1630 – 1700
TBB03	1830	11	1300	1900	1580	1900	1580 – 1650
TBB03	1831	10	1480	1846	1630	1700	1630 – 1700
TBB03	1832	27	1400	1900	1580	1900	1580 – 1650
TBB03	1834	1	1550	1700	1550	1700	1550 – 1600
TBB03	1835	5	1550	1900	1630	1700	1630 – 1700
TBB03	1836	3	1480	1846	1570	1846	1570 – 1846
TBB03	1837	7	1400	1846	1630	1700	1630 – 1700
TBB03	1838	7	1570	1900	1580	1900	1580 – 1700
TBB03	1839	5	1550	1900	1580	1900	1580 – 1700
TBB03	1843	3	1570	1846	1570	1846	1570 – 1800
TBB03	1846	6	1550	1846	1570	1846	1570 – 1700
TBB03	1851	1	1580	1900	1580	1900	1580 – 1900
TBB03	1853	1	1580	1700	1580	1700	1580 – 1700
TBB03	1854	1	1480	1650	1480	1650	1480 – 1650
TBB03	1858	2	1550	1846	1570	1846	1570 – 1700
TBB03	1859	20	1480	1900	1630	1700	1630 – 1680
TBB03	1860	5	1480	1846	1570	1846	Late 17 th – Early 18 th century
TBB03	1861	2	1550	1846	1570	1846	1570 – 1700
TBB03	1868	5	1550	1900	1580	1900	1580 – 1700
TBB03	1879	1	1080	1350	1080	1350	1080 – 1350
TBB03	1922	2	1080	1350	1080	1350	1080 – 1350
TBB03	1925	10	1080	1400	1240	1400	1240 – 1350

APPENDIX 7

ASSESSMENT OF THE BUILDING MATERIAL

Kevin Hayward

INTRODUCTION

A very large assemblage (1590 fragments, 408.80kg¹) of building material from 169 Tower Bridge Road was examined as part of an assessment of the finds from the site. Ceramic Building Material made up 95% (1506 fragments) and 245.44kg by weight with stone (including large worked stone) forming only a small proportion of the assemblage; 84 examples (5%), 163.36kg by weight.

AIMS

This assessment serves a number of purposes.

- The identification (under binocular microscope) of the fabrics and forms of ceramic building material from 169 Tower Bridge Road.
- The identification of the geological character and (where possible) the geological source of the stone in order to assess how far the material travelled to the site.
- In each section - identify any interesting or unusual pieces that warrant retention.
- A phase summary relating the types of ceramic building material fabric, form and the stone-type and function to the different phases and areas of activity at the site.
- The compilation of a stone catalogue (TWG00CBMI), which accompanies this assessment.
- Rationalisation of the building material assemblage at 169 Tower Bridge Road and recommendation for further analysis.

METHODOLOGY

The building materials were examined using the London system of classification with a fabric number allocated to each object. The application of a 1kg masons hammer and sharp chisel to each example ensured that a fresh fabric surface was exposed. The fabric was examined at x20 magnification using a long arm stereomicroscope or hand lens (Gowland x10). Where possible, comparison was then made with the Pre-Construct Archaeology Ltd. building material reference collection in order to provide a match. After analysis the common fabric types were discarded. Any unusual or interesting fabrics were retained.

¹ 44 shoe boxes, 3 skele boxes.

CERAMIC BUILDING MATERIAL FORM AND FABRIC

An overview of the ceramic building material assemblage from the site, by fabric and form serves to quantify the common fabrics and highlight the presence of any unusual or interesting fabric types that may provide valuable dating evidence in the phase summary.

Roman Ceramic Building Material

42 examples

3kg

Roman Sandy Fabric Group 2815 (2452, 2459a, 3004, 3006)

Eccles Sandy Fabric Group 2454

Carbonate Fabric Group 3013

Daub [1577]

Mortar [1911]

A small assemblage of abraded Roman ceramic building material (tile, brick and daub) was identified from the earlier phases at the site. The size and condition of the assemblage reflects the scarcity of Roman occupation from this part of Southwark and the high water levels which affected much of the site until post-medieval reclamation.

As would be expected from redeposited material, most of the important London Roman fabric groups are represented with over 30 examples (2.7kg) from the early sandy group 2815 (AD50-150) especially 2452, and six examples from the distinctive cream-coloured Eccles fabric group 2454. Later Roman fabrics which are represented by just one example of a rounded flange tile of the 3rd- 4th Century, carbonate fabric 3013.

Medieval and Post-Medieval Ceramic Building Material

1271 fragments and complete examples

213.3kg

The large quantity (by fabric and form) of fragmentary medieval and post-medieval ceramic building material at 169 Tower Bridge Road in part reflects the results from the standing-building assessment at Sarson's Vinegar Factory (Hall *et al.* 1997). However, this assessment has also found quantities of ceramic building material from earlier phases associated with reclamation and levelling of the site and later tanning industries (for phasing see summary). Most of the tile and brick is fragmentary with reuse of these materials quite common. There are however examples of complete fresh tile and brick, some of which have been retained (refer to the phasing summary for a more thorough examination of the medieval and post-medieval CBM assemblage). Many of the common post-medieval fabric types from London are represented.

Post Medieval Roof Tile

889 fragments and complete tiles

80.8kg

Common Fabrics

The two most common types of the London Roofing Fabric present at 169 Tower Bridge Road, both have broad date ranges. Pan Tiles fabric 2279 which is introduced shortly after the Great Fire, whilst the Peg Tiles of Fabric 2276 were manufactured between 1480 and 1900. Details as follows:

Peg Tile 2276/2271 - 625 fragments (41.5%), 41.8kg.

Iron Oxide fabrics are comparable with Peg Tile 2586 and 2587. 39 examples, 8.3kg.

Dumps of Peg Tile in [306], [1000], [1685] and [1700].

Pan Tile 2279 -264 examples (17.5%), 39kg.

Iron Oxide fabrics are the comparatively rare 3090 and 3094. 49 examples, 3.5kg.

Unidentified pan-tile fabrics are concentrated in contexts [871], [928] and [1000]. 21 examples, 3.7kg retained.

Dumps of fragmented Pan-Tile in [871], [877], [928], [1486] and [1849].

Condition and Reuse

Nearly all examples are fragmentary except [1700], complete peg tiles fabric 2276 and [297] complete pan tile fabric 2279. Tile reuse (mortar adhered to all sides) is common in [297], [369], [1000], [1211] and [1217].

Medieval and Post Medieval Brick

383 fragments and complete bricks

132.5kg

Common fabrics and forms

The post-medieval brick fabrics 3032, 3032nr3033, 3033 and 3034 dominate the assemblage throughout the site and compliment the results from the Sarson's Vinegar Standing Building Assessment, where orange 3033 and purple 3032 bricks are described in the walling of the early Sarson's building. The paving brick fabric 3047 is also associated with the Sarson's Vinegar factory and is used for a specific purpose (paving base for machinery), whilst some reused older transitional Tudor/post-medieval fabrics 3030; 3033 and 3065 and one Dutch Paving Brick fabric 3035 (1600-1700) have also been recorded. These rarer fabrics have all been retained. Only one example of the very common London Stock Brick fabric 3036 has been identified.

Most of the post-medieval bricks are unfroged but lack a sunken margin and flared headers, which suggests that most of the loose brick assemblage is post 17th century. The dating implications by brick fabric and form are covered in the phase summary. Types recovered are as follows:

3032 (1660-1990), 63 examples (16.5% of all brick), 23.2kg.

3032nr 3033(1664-1725+), 82 examples (21.4%), 20.3kg.

3033 (1450-1700+), 164 examples (42.8%), 32.9kg.

3034 (1666-1900), 48 examples (12.5%), 14.3kg (Three dogleg brick forms [1694], and two Moulding Bricks [385] retained).

3047 (1680-1900), 14 examples (3.7%), 38.7kg (Very large complete paving bricks (300x300x40mm) identified from [253] and [778]).

3030; 3033trans; 3035; 3065 (Tudor/early post-medieval), 9 examples (2.3%), 3.3kg.

3036 (modern), 1 example (0.3%), 287g.

Condition and Reuse

Apart from brick tile from [253] (fabric 3047), some moulding [385] and dogleg bricks [1694] (fabric 3034) and some occasional complete examples most brick was in a fragmentary condition. Evidence for brick reuse was common especially from [297] (fabric 3033), [369] (fabric 3033 and 3034), and [1000] (fabric 3032nr3033).

Medieval and Post Medieval Floor Tile

19 examples

5.1kg

Common fabrics and forms

Apart from one example of a possible reused Westminster Tile from context [985] (fabric 3081), the floor tile assemblage at 169 Tower Bridge Road is characterised mainly by Flemish (2318E; 1977) and to a lesser extent Delftware Tiles that are mainly post-medieval (1450-1800) in date. This is in accordance with the dates for the brick and roof tile assemblage at the site. Unknown fabrics (probably Flemish) are from the same context [1000] as some of the rarer Pan Tiles fabrics. All floor tile has been retained. Types recovered are as follows:

2318E (1450-1800), 8 examples (42.1%), 1872g.

1977 (1450-1800), 4 examples (21.1%), 1852g.

2320 [1832] (1300-1500), 1 example, 27g.

Unknown [1000] [1481] [1831], 3 examples (15.8%), 1081g.

Westminster 3081 (1225-1285), 1 example, 247g.

Delftware Tile Blue [1287] N10-N18 Late 17th/Early 18th Century "Pope Style" (Ref).

Purple [990] 1650-1750.

Tin Glazed Wear [245] 29g.

Condition and Reuse

All tiles are either fragmentary or reused none are complete.

Mortar and Daub

28 examples

1.1kg

Only a small quantity of Daub (736g) e.g. [40] and Mortar (313g) e.g. [33] from Post-Medieval Contexts was present at Tower Bridge Road nothing was retained.

STONE – GEOLOGICAL DESCRIPTION AND SOURCE

84 examples

163.36kg

Common Fabrics and Forms

A varied and unique assemblage of stone types in terms of function and geology is represented at 169 Tower Bridge Road. This is in contrast to the near absence of stone walling material in preference to brickwork in buildings on the site. Instead of large quantities of Kentish Ragstone, Chalk and Flint, we are left with material associated with kilns and burning (Oil Shale – Kimmeridge and Hearthstone Greensand) and paving slabs of a specialist function (Carrara Marble and Forest Marble). There is some reuse of moulded stone and church furniture (Ketton Limestone; Kentish Ragstone; Sussex Marble) possibly from the nearby Bermondsey Abbey, but not in the quantities one would expect. Some smaller portable stone objects (Jet; German Lavastone Quern; Greensand Hone) are mentioned elsewhere. The stone types recovered from the site are summarised in Table 1.

The variety of stone types identified from the post-medieval phases at Tower Bridge Road also reflect the proximity of sites along the south bank of the Thames to riverine and maritime access. The Thames links the site to outcrops upstream from the Cotswolds (Forest Marble) and downstream via the Medway (Lower Cretaceous Greensands) as well as from eastern England (Ketton Stone) and the continent.

Burnt, oil-rich, dark grey Kimmeridge Shale from the Upper Jurassic of Dorset [871], [941], [1823], [1825] and [1829], and Anthracite from the Upper Carboniferous coal measures of South Wales [388] relate to post-medieval (industrial) Kiln or heating use at the site.

Stone Type	Geology	Source	Code	Weight
Reigate Stone	Upper Greensand	East Surrey	3107	2.72kg
Sussex Marble	Lower Cretaceous	Petworth, West Sussex	3120	1.12kg
Kimmeridge Shale (burnt)	Upper Jurassic	Dorset	3120	1.47kg
Anthracite Coal	Upper Carboniferous	South Wales	3120	90g
North Wales Slate	Palaeozoic	North Wales	3115	1.47kg
Cornish (Blue-Green) Slate	Devonian	North Cornwall/Devon	3115	145g
Portland Stone – Whit Bed	Upper Jurassic	Isle of Portland	3110	30kg
Kentish Ragstone	Lower Cretaceous	Maidstone/Kent	3105	44.15kg
Ketton Stone	Middle Jurassic	Rutland	3124	75kg
Forest Marble	Middle Jurassic	Oxfordshire	3132	2.72kg
Carrara Marble		Northern Italy	3114	4.35kg

Table 1: Stone Types Recovered from 169 Tower Bridge Road

A large quantity of vitrified hearthstone (kiln furniture) from the Upper Greensand of the Reigate area of Surrey is likely to relate to industrial post-medieval kiln firing – possibly [21], [425], [1477], [1481] and [1788]. This stone is from the same geological formation as Reigate Stone used to mould stone in many nearby medieval ecclesiastical construction projects (e.g. Southwark Cathedral and Bermondsey Abbey). The inferior harder coarser sandy texture of hearthstone is a resilient material during burning and was very frequently used in the 18th/19th century.

Interestingly no reused moulded Reigate stone from the nearby Bermondsey Abbey (BA84) has been identified from this assemblage emphasising the industrial focus of these sites. Only a very small pentagonal masons reference stone [1834] of Reigate Stone may relate to this building. Very little walling material has been identified and stone roofing tile is restricted to the occasional fragment of Cornish Slate (Devonian – Delabole) a common material in the 18th/19th century. A large grave slab dated to August 1770 is made from Portland Whit Bed (Upper Jurassic – Dorset) – this freestone supplied the needs of most of the architectural buildings and funerary monuments after the great fire in London. This late 18th century date is consistent with the use of this stone.

One surprising discovery was the identification of possible Church Furniture (altar fragment?) made from Sussex (or Petworth) Marble from West Sussex. This freshwater limestone from the Lower Cretaceous (Wealden) was frequently used in medieval priories for this purpose e.g. Merton Priory (MPY76-88) and Bermondsey Abbey (BA84), because of its ability to take polish. It is possible that this fragment may have come from the nearby Bermondsey Abbey. Two curved mouldings of Ketton Stone from walling at [255] and [256], one with a cross masons-mark may relate to reused voussoir fragments from Bermondsey Abbey. Ketton stone, from the Upper

Lincolnshire Limestone (Middle Jurassic) of Rutland is an unusual rock type for London – a few parallels have been found in medieval stonework from London and a version of this rock (Weldon Stone) was used in quantity for sarcophagi during the Roman Period. Some moulded Kentish Ragstone used in walling from [255] and [75] may also relate to this. Other than that there is an unusual oyster-rich shelly limestone that has been used in paving [1691] – the fossil content is consistent with a Middle Jurassic (Bathonian) marine limestone, possibly a Forest Marble from Oxfordshire. It is possible, however, that it could be one of the shelly Purbeck Limestones from Dorset e.g. Spangle Bed that can also take polish.

Finally, two large paving slabs of Carrara Marble – Northern Italy, have been found reused in a well [1694] and were probably used (along with the Forest Marble and paving brick fabric 3047) in paving. The use of white marble becomes common during the late 18th to early 19th century. Evidently the quality and distance that these materials were brought in does reflect some status.

In conclusion the types of stone and the range of uses to which each has been put towards at 169 Tower Bridge Road are broadly consistent with the function (industrial) and age of the site (post-medieval to Victorian). In addition to some interesting accessioned portable stone objects including a German lavastone quern fragment [363], Greensand (Kentish Ragstone) whetstones [991] and [361], a piece of jet [1025] (Kimmeridge Shale Upper Jurassic) and an axe fragment [1925] of a green volcanic rock (Borrowdale Volcanics – Lake District), there is a surprising variety of material types.

PHASE SUMMARY

This summary will assess the overall character of the building material assemblage from each phase and (where possible) relate their fabric and form (including evidence for reuse) to the proposed date and function for each occupation phase at 169 Tower Bridge Road. Specific comment will be made to the building material from important structures and features and whether there are any anomalies between proposed phasing and dates suggested by the material. However, it is not an attempt to catalogue and date every fabric type to every context from this phase. Here, referral can be made to Table 2 (below) and to the accompanying catalogue TWG00CBM1.

Phase 1 and 2 Natural and Prehistoric 1

No building material present.

Phase 3 Prehistoric 2

4 examples

171g

Only a tiny quantity of abraded roman tile (fabric group 2851 AD50-200) was identified from a small rectangular pit associated with prehistoric occupation in Building 6 [1929]. These must be intrusive.

Phase 4 Prehistoric 3 Large E-W Ditch

No building material present associated with prehistoric ard-marks from the southern half of the site.

Phase 5 Soil Formation

4 examples

265g

Tiny quantity of abraded roman tile (fabric group 2851 and Eccles fabric 2854 AD50-200) mixed with a reused Pan Tile (1666-1900) from a buried soil horizon in Building 6 [1557]. These may be intrusive.

Phase 6 Late Prehistoric Alluviation

No building material present.

Phase 7 Roman Drainage

12 examples

609g

Associated with the recut E-W drainage ditch from the area in Building 6 [1555] and [1566], more abraded Roman tile (fabric group 2851 AD50-200). Some daub from alluvial layers in Building 5 [1083]. All washed in.

Phase 8 Post-Roman Alluviation

26 examples

1203g

Associated with alluvial layers are many more examples of abraded Roman tile and brick (fabric group 2851 and Eccles fabric 2854 AD 50-200) in Building 5 [1154], Building 6 [1471] and [1577] and the Gatehouse [1918] and [1922]. Post-medieval brick and pan tile from [1471] and [1577] is intrusive.

Phase 9 Late Medieval-Early Post-Medieval Drainage

The fabric type and form of the building material assemblage from reclamation Phase 9 are consistent with the early post-medieval date assigned to it. A very large collection of common fragmentary post-medieval brick 3032, 3032nr 3033 and tile 2276 (and 2279) (1630-1850) fabrics were identified from Buildings 1, 5 and 6. However, the dominance of 3032nr 3033 fabrics is more typical of an earlier post-medieval date [1664-1725]. Their form (shallow -sunken rim) is also

consistent with the dating of this phase. The ditches and pits that characterise this phase are filled with these fragments. Furthermore the presence of some transitional dusky Tudor to early post-medieval brick fragment fabrics 3032nr 3033 found dumped in a substantial north-south aligned ditch [1823] and [1825] back this up. Although there is no evidence for reuse it is likely that these bricks were employed as infill from a demolished structure nearby. A large quantity (10.7kg) of fragmentary material was associated with the feature.

Phase 10 Post-Medieval Consolidation

Subsequent ground raising and levelling continued to yield quantities of ceramic building material that can be dated to the earlier post-medieval period. In Building 1 reused earlier post-medieval brick fabrics 3032nr 3033 [1664-1725] along with quantities of dumped pan tile 2279 [1660-1850] could be identified from [569]. Of passing interest is the building material associated with the clinker levelling layer [363]. This contained an admixture of degraded Forest Marble paving and Tudor/ early post-medieval brick possibly from an earlier building.

Phase 11 Post Medieval Activity 1 – Tanning Pits

The evidence from the building material fabric found in the pits, dumps and structures from this phase points to slightly later post-medieval activity. The earliest pits associated with leather making continued to yield dumps of the post-medieval pan-tile 2279 fabric but in much larger quantities (4kg beneath Building 1 [361] and 1.5kg of reused pan tile together with Flemish tile fabric 2318 [1600-1800] from Building 5 [1020]). Quantities of Kiln Furniture hearthstone from the pits in Building 6 provide evidence for burning during this phase, as does the continued dumping of fragments of pan tile [1859]. However, the main area of interest is the building material contained within the earliest example of a walled structure from 169 Tower Bridge Road. The site context sheet records the walling from beneath Building 1 [410] as unfrosted 3033 red brick. However, the analysis of the building materials from the contemporary floor [385] identifies 2 voussoir bricks 3034 which are important for two reasons. Firstly, this is the earliest example of fresh complete brick made from this later [1666-1900] fabric at the site. Secondly, voussoir bricks would suggest a building of some importance. Burnt Kimmeridge (Oil) Shale found in a square pit of this floor [388] and burnt tile and grey mortar may suggest it had an industrial function – the evidence supplied from the timber lining may suggest this to be tanning pit. Finally, from Building 6 there is a small interesting assemblage of Tudor-early post-medieval brick fabric 3032nr 3033; 3042 dumps (used for levelling towards the end of this phase) [1859] and other dumps consisting of later post medieval brick and tile fabrics (10kg) [1832]. These separate groups of materials would suggest dismantling from nearby buildings of different ages.

Phase 12 Post Medieval Industry 2: Late 18th/Early 19th Century

The dating evidence provided by the form and fabric of the building material associated with the second phase of tanning at the site is broadly consistent with the later 18th/early 19th century dates provided by other materials. Reused post-medieval brick 3032, 3033 and 3034, and pan tile fragments in the fill of cess, tanning, tawing and clay tobacco pipe pits confirm this. Burnt (vitrified) Flemish floor tile, peg tile and concrete from the clay tobacco pipe pit in Building 1 [340] confirm the continuation of industrial activity. Similarly, in Building 6, kiln furniture hearthstone is common. During this phase the floors of some of these pits [375]/[376] are lined with courses of brick or burnt Flemish tile [328] and complete pan-tile suggesting that their function had begun to change. It was from near here that an example of reused church furniture made from Sussex Marble was found [378], the earliest example of possible reuse from Bermondsey Abbey. This seems to continue in Phases 13 and 14 with examples of reused Ketton Stone and Kentish Rag mouldings in the walling of Sarson's Vinegar Factory.

Phase 13 Post Medieval Industry 3: Sarson's Vinegar Factory

This phase sees a dramatic increase in the use of brick in walling during the first building phase of Sarson's Vinegar Factory. The large quantity of purple (fabric 3032 and 3034 ?) brick [1664-1900] and yellow 3035 London Stock Brick [1770-1940] identified from the walling of Buildings 1, 5 and 6 (including the gateway) are consistent with the early 19th century plans for its construction. Retained brick from this phase includes three unique dogleg bricks² in fabric 3034 that curve and form the lining of a sub-rectangular vertical pit (probably a cess pit) from within the gateway part of Building 6. Purple bricks (also presumably 3032 or 3034) are found close by on the western edge of the Gatehouse. Within the cess deposit are dumped deposits of very high quality polished slabs of white Carrara Marble and Forest Marble from Oxfordshire – it is not clear whether these slabs are associated with an industrial flooring for machinery as seems to be the case with the paving bricks from Phase 14. Their thickness and regularity are, however, consistent with the latter paving bricks and it is possible that the softness and brittleness of these calcitic materials was found not to be suitable or robust enough to withstand heavy machinery associated with vinegar production. Mention needs to be made of a unique assemblage (10kg) of broken pan-tile fabrics at Building 5, associated with a late tanning pits [871] and [928] – these unidentified fabrics are unlike any of the other pan tile dumps from 169 Tower Bridge Road and probably represent the collection and reuse of material from an entirely separate structure.

Phase 14 Post Medieval Industry 4: Sarson's Vinegar Factory

The extension to Buildings 1, 5 and 6 as seen by extensive walling from the standing building study (Hall *et al.* 1997), of bricks characterised by fabric 3032, 3033 and 3035 is mirrored in the large quantity of 19th century paving material unearthed for further analysis. The robust orange tile

brick fabric 3047 (common during the Victorian period) is particularly frequent (38kg) with complete examples 300x300x40mm from the flooring of [253] and [778]. It is a particularly tough brick and may have replaced the softer limestone and marble tiling found dumped in a cesspit from Phase 13. The metal scar from iron or steel machinery and impressions from this context would suggest that the floor supported footings to house the machinery.

Other materials of interest are the large curved blocks of masonry made from soft Ketton Stone from the Middle Jurassic of Lincolnshire and harder Kentish Ragstone from the Lower Cretaceous of the Weald, reused (mortar attached) in the stone wall extensions from this phase. Both of these materials have been identified in medieval ecclesiastical buildings but the identification of Ketton stone is particularly unusual. The nearby Bermondsey Abbey would have been a useful quarry for this stone as well as for Lincolnshire Limestones (Barnack, Weldon and Ancaster) which were frequently used in building and funerary monument construction. There must have been a ready supply of stone available from the abbey ruins around the time that the extension to the Sarson's Vinegar Factory was constructed.

Finally a large gravestone slab of Portland stone found reused in the 19th century yard of the house adjoining the Vinegar Factory provides a valuable chronological marker for this site. Not only does the date of death (1770) of the individual provide a valuable piece of evidence in dating the late 18th century phases of this site (11-12), but the use of Portland stone (Whit Bed) from the Dorset coast was a common and fashionable material to work for buildings and tombstones at this time.

RECOMMENDATIONS

Rationalisation

Discard - 1570 fragments (93.7%), 218.5kg (75.3%)

Released boxes 41 (38 shoe and 3 skeleton boxes)

The decision to discard 75.3% of the assemblage by weight was based on the frequency of some very common post-medieval pan 2279, 3094 and peg tile 2276 fabrics and bricks types 3032, 3032nr3033, 3033 and 3034. There was no need to retain large quantities of broken up ceramic building material, particularly at a site where the early post-medieval phases (9-12) consisted mostly of dumped layers. Much of the structural walling material from the later 18th/early 19th century phases contained complete bricks of very common fabric types 3032, 3032nr 3033, 3033, 3034 and 3047, and again the decision was made to discard these.

Retention – 116 fragments (6.3%), 71.8kg (24.7%)

² 15 courses of these bricks were identified during the excavation.

Remaining boxes 6 (*all shoe*) and two large gravestone slabs.

13% of the boxes retained.

A very small proportion of the building material assemblage was retained based on the following criteria.

- Unusual post-medieval ceramic tile fabrics, for example the large quantity of exotic unidentified fabrics from [871].
- Unusual medieval/Tudor brick fabrics reused in post-medieval/Victorian phases for example 3030 [1797]; 3033 *transition* [1823; 1851; 1859].
- Voussoir plinth bricks [385] and dogleg forms – 3 examples [1694].
- Burnt and slag encrusted bricks [340] to show industrial activity on site.
- Flemish Floor Tile Fabrics 2318e; 1977.
- Possible Westminster Tile Fabric W65 [985] and Delftware tiles e.g. [990] [1287] for chronological reasons.
- Gravestone of Portland Stone retained – dating evidence 7th August 1770. [59].
- Unusual shelly paving material – possibly Forest Marble [1691] as well as Carrara Marble [1694].
- A representative selection of Roman Tile Fabrics Groups 2815; 2454; 3013 from the early occupation Phases (3 to 8) and examples of Post-Medieval fabrics in contexts

Rationalisation of each building stone example (Retain) is included in the accompanying catalogue (TWG00CBMI)

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Site Code	Context	Date	Comments
TBI 01	1	1630-1850	
	8	ND	Estimated date after 1700 when oil shale used
TWG 00	28	1630-1850	
	29	1700-1850	
	33	1630-1850	
	39	1480-1800	
	40	ND	
	59	c. 1770	Shortly after Aug 1770. Portland tombstone inscription
	69	ND	
	74	1450-1900	Probably 1600-1900 as re-use
	75	ND	
	77	Modern	Re-use of modern concrete
	78	1666-1900	
	79	1600-1900	Re-use
	85	1450-1800	
	86	1450-1800	
	87	ND	
	96	1200-1800	
	231	1600-1900	
	233	1630-1850	
	236	1630-1850	
	249	1630-1850	
	253	1800-1900	As fabric 3047 so well made
	254	1680-1900	
	274	1750-1900	
	276	1630-1850	
	297	1750-1900	
	300	1750-1900	
	306	1630-1800	
	311	1630-1800	
	328	1630-1800	
	340	1800-1900	
	356	1700-1800	
	361	1630-1850	
	363	1700-1850	
	366	1690-1900	
	367	1700-1850	
	369	1750-1850	
	371	1180-1800	
	374	1750-1900	
	378	1600-1850	
	385	1750-1850	
	387	ND	
	388	1450-1800	
	393	1630-1850	
	395	1660-1800	
	397	1450-1850	
	405	1450-1900	
	407	1450-1900	
	410	1750-1850	
	425	1630-1900	
	428	1630-1850	
	433	1750-1850	
	456	1750-1850	

Site Code	Context	Date	Comments
	462	1700-1850	
	463	1700-1900	
	464	1700-1850	
	478	1700-1900	
	485	1700-1900	
	499	1700-1850	
	503	1180-1800	
	508	1700-1850	
	512	1450-1900	
	518	1630-1850	
	528	1630-1850	
	529	1630-1850	
	559	1450-1900	
	569	1700-1850	
	577	1450-1900	
	583	1450-1850	
	584	1650-1850	
	702	1450-1900	
TBA 03	778	1800-1900	Well made 3047
	860	1700-1900	
	861	1700-1900	
	871	1750-1850	
	877	1750-1850	
	878	1750-1850	
	895	1750-1850	
	907	1450-1900	
	921	1700-1900	
	924	1450-1900	
	928	1750-1850	
	941	1750-1850	
	948	1750-1850	
	968	1170-1900	
	985	1275-1900	Re-used Westminster Tile
	990	1700-1850	
	991	1630-1800	
	1000	1700-1850	
	1009	1450-1900	
	1011	1450-1900	
	1013	1450-1900	
	1020	1700-1850	
	1025	1700-1850	
	1027	1700-1900	
	1031	1700-1900	
	1038	1700-1900	
	1041	1450-1900	
	1044	1600-1900	
	1083	ND	
	1118	1200-1800	
TBB 03	1154	AD50-80	Probably residual
	1182	1700-1900	
	1184	1800-1900	
	1209	1700-1850	
	1211	1700-1850	
	1213	1700-1850	
	1215	1700-1850	
	1217	1700-1850	

Site Code	Context	Date	Comments
	1223	1750-1850	
	1228	ND	
	1246	1664-1900	
	1248	1664-1900	
	1254	1700-1850	
	1255	1700-1850	
	1258	1200-1800	
	1263	1450-1900	
	1267	1450-1900	
	1269	1450-1900	
	1273	1660-1900	
	1276	1750-1900	Thicker brick 3032
	1277	1750-1850	Plinth thick brick 3032
	1285	1630-1850	
	1287	1700-1850	Re-used Delftware tile
	1467	1750-1850	Frog quite prominent
	1471	1450-1900	With a lot of residual Roman
	1472	1700-1850	
	1475	1450-1900	
	1477	1630-1850	
	1479	1630-1850	
	1481	1800-1900	Good quality brick fabric 3047
	1482	1630-1850	
	1486	1700-1850	
	1494	1664-1850	
	1496	1630-1850	
	1498	1640-1900	
	1533	AD50-160	
	1539	1450-1900	With residual Roman
	1555	AD50-160	
	1557	1630-1850	With residual Roman
	1566	AD50-160	
	1570	1450-1900	
	1575	1664-1725	With residual Roman
	1577	1666-1900	
	1578	1450-1900	
	1650	1630-1850	
	1667	1450-1900	
	1685	1630-1850	
	1688	1450-1900	
	1691	1450-1900	
	1692	1700-1850	
	1694	1750-1900	
	1696	1630-1850	
	1697	1770-1850	Only occurrence of 3036 London Stock Brick
	1699	1630-1850	
	1700	1450-1900	New peg tiles cannot be more precise on date
	1725	1630-1850	
	1744	1750-1850	Re-used Pan Tile
	1747	1750-1850	
	1754	1450-1900	
	1755	1630-1850	
	1756	1664-1850	
	1758	1720-1800	
	1762	1450-1900	
	1771	1664-1900	

Site Code	Context	Date	Comments
	1773	1664-1900	
	1780	1450-1900	
	1784	1664-1900	
	1788	1600-1800	
	1796	1700-1850	
	1797	1700-1850	
	1805	1450-1900	
	1810	1664-1900	
	1823	1664-1850	Despite some re-used Tudor brick
	1825	1664-1850	Despite some re-used Tudor brick
	1829	1700-1900	As re-used peg tile
	1830	1664-1850	
	1831	1700-1800	
	1832	1800-1900	Well made 3047
	1834	1750-1850	Some re-use
	1835	1700-1850	
	1836	1664-1850	
	1837	1664-1800	A lot of older brick fabrics
	1838	1630-1850	
	1839	1664-1850	
	1843	1664-1800	
	1846	1630-1800	
	1849	1630-1850	
	1851	1664-1850	
	1853	1450-1900	
	1858	1630-1850	
	1859	1630-1850	Despite re-used Tudor brick
	1860	1664-1850	Residual Roman
	1861	1664-1800	
	1866	1664-1900	
	1868	1664-1850	
	1874	1664-1850	
	1878	1664-1900	
	1885	1664-1900	
	1889	1650-1800	
	1894	1664-1800	
	1903	1180-1800	
	1918	AD50-160	Roman
	1919	1600-1800	Re-used Roman
	1922	1450-1900	A lot of residual Roman
	1923	AD50-160	
	1925	AD55-160	
	1929	AD55-160	

Table 2: Dates of Contexts Suggested by Building Materials

APPENDIX 8

ASSESSMENT OF THE CLAY TOBACCO PIPE, MUFFLE AND PRODUCTION WASTE

Chris Jarrett

INTRODUCTION

The assessment report of the clay tobacco pipes, muffle and production waste comes from a number of excavations where relevant material was uncovered at 169 Tower Bridge Road, Southwark: TWG00, TBI01, TBA03, TBB03. A medium sized assemblage of clay tobacco pipes came from the site (19 boxes). Most fragments are in a fairly good condition, indicating that they had not been subject to much redeposition or were deposited soon after breakage. A number of fragments are covered in muffle or show signs of being wasters from local clay tobacco pipe production. Muffle, a rack, trimming rings (clay derived from trimming of the pipe in the mould, but subsequently fired) and other material associated with clay tobacco pipe production is also present. The clay tobacco pipe types date to between c.1610-1880. Clay tobacco pipes occur in 107 contexts mostly in the form of small groups (under 30 fragments), beside medium sized groups (31-100), one large group (over 100 fragments) was found in context [312] and one very large group (multiple boxes) came from deposit [340].

All the clay tobacco pipes and production material (3200 fragments, of which none are unstratified) were recorded in an ACCESS database. The quantification of the material for each site code is shown in Table 1. Classification of the bowl types is by Atkinson and Oswald's (1969) typology (AO) while 18th-century (prefixed OS) and non-local examples were classified to Oswald's (1975) typology. The Dutch bowl is classified following Atkinson and Oswald's typology (1972). The pipes are further coded by decoration and quantified by fragment count. The degree of milling has been noted and recorded in quarters, besides the quality of finish. The tobacco pipes are discussed by their types and distribution.

Site code	Clay tobacco pipe			Kiln furniture		Production waste				Total
	Bowl	Stem	Nib	Rack	Trimming rings	Kiln wall	Muffle	Slag	?	
TBA03	105	15						2		122
TBB03	54	169	14							237
TBI01		4								4
TWG00	888	1565	202	1	21	1	156	1	2	2837
Total	1047	1753	216	1	21	1	158	1	2	3200

Table 1: Quantification of clay tobacco pipes, kiln furniture and other production waste by fragment count for the individual sites at 169 Tower Bridge Road.

THE CLAY TOBACCO PIPE TYPES

London area bowls

1610-40

AO5: one possible bowl of this type has been identified, although its heel is missing. It is a quarter milled with a good finish.

1640-60

AO9: four spurred bowls. The extent of rim milling varies between three quarters and full, while the quality of finish is good.

AO10: sixteen heeled bowls, with one notable very angled bowl type. The milling of the rim varies from a quarter to full and the quality of finish is also variable and is poor to good.

1660-80

AO13: four heeled bowls and includes one intermediate type between the earlier AO10 and AO13. These bowls have half to full milling and are mostly of a good finish.

AO15: 42 spurred bowls of a fair or good quality and quarter to full milling of the rim.

AO15/AO19: one bowl intermediate in size between the spurred AO15 and the later development AO19, damaged.

AO18: four straight-sided, heeled bowls, mostly of a good finish with three-quarter to full milling of the rim. One bowl from TBB03, context [1182] is possibly a waster and covered in possible muffle.

AO18/20: one bowl with a quarter milling and fair finish may be either a tall AO18 or short AO22 type.

1680-1710

AO19: six examples of this spurred bowl with none, or a quarter to a three quarters milling of the rim and mostly of a good quality finish.

AO20: four, possibly five rounded profiled, heeled bowls are of fair to good quality, with a quarter or no milling (typical for this period when this practice was abandoned). The earliest maker marked pipes on the site are two examples of this type with the initials W P on the heel. On both bowls the letter W has been re-cut in the mould. Oswald (1975, 143) lists four pipemakers with the initials W P working in the 1680-1710 period, but none are specifically located in the Southwark area.

AO21: six heeled bowls with rounded profiles, which are predecessors to the uniform AO25 18th century type. Five of the AO21 bowls come from one context: [567] and three of the bowls are notable for having splayed heels.

AO22: nine bowls with straight sided profiles and mostly a quarter milling, with three examples with more extensive milling occur, but all are of fair to good quality. One bowl (from TBA03 [860]) has a small circular stamp on its back with the initials I I in relief. Oswald only records one pipe maker for this period as John Jones (1), possibly (2), documented in 1696 and 1704 respectively, but it is not known where he or they were working in London.

1700-1770/80

AO25: there are 28 heeled bowls that are too damaged to be assigned to an Oswald 1975 18th-century bowl shape.

AO25/26: one bowl has its heel or spur missing but has the Hanoverian coat of arms moulded and the initials I P in relief on the front of the bowl; the pipe maker is not known, but a similar bowl has previously been recorded (Le Cheminant 1981, 125). An OS23 bowl by this same maker and with this design is also present in the assemblage (see below).

1700-1740

AO24: seven American export (without heels or spurs) type bowls. The shape can be compared to OS type 27, dated c. 1730-60 with a more rounded bowl profile, but the examples from this site tend to be narrower than that type and earlier in the date range.

OS10: 829 bowls are recorded of this type. A small number represent notably smaller variants. Those marked are as follows, with a preference given for the possible makers being in residence and working in the parish of St Olave's (Walker 1981):

Heel marks:

With a dot in relief on each side of the heel: two examples.

O: with only the family name depicted, one example.

W: with only the family name depicted, one example with a red fired surface and muffle.

? ?: two examples where the initials are illegible.

A A: one example; Anthony (Arthur) Andrews, 1694-1716, ?Surrey, Anthony Atkinson, 1696.

A H: twenty examples, two of which have a 'red' fired surface and muffle deposit: Abell/Abel Horton 1717-22 (St Olave's parish), but also possibly Anthony Harding, 1696 or Anthony Haynes, 1722. Two other bowls possibly with these initials but not so legible: ?A H and A H or N.

M B: four bowls, possibly for Michael Brittain, 1725 (Oswald 1975, 131).

W B: one bowl, possibly for William Brooks, 1701, St Olave's, but see also Oswald (1975, 132).

I C or G: one bowl.

W E: one bowl, maker not known.

H ?G: one bowl.

N G?: one bowl.

S G: one bowl, with circles over the top of the initials, possibly Samuel Gandy, 1735, St Lukes.

?W G: one bowl, possibly William Goulding (1), 1712, William Goulding (Gould) (2), 1733-62, Horsley Down.

A H: twenty one bowls, probably Abel Horton, 1717-22, St Olave's. One other bowl marked A H?N where the family name is uncertain.

I H: two bowls, initials noticeably in relief, but one where family name is not clear. John Horn, 1711-15 and John Holtie, 1732 are both local pipe makers in the parish of St Olave's (Walker 1981, 178)

I K: four bowls and a fifth where the family name is not so clear. I K probably John Knight, 1712, St Olave's (Walker 1981, 178).

R K: two bowls, probably Robert Knight (2), 1714-25, St Olave's (Walker 1981, 178).

I L: one bowl but the family initial is unclear. Muffle on the front of the bowl. I I: James Last, 1720-1727.

S M: five bowls (two additional bowls ? M) and two with a muffle deposit, 'red' fired surface and manufacturing faults. Maker not known.

I O: one bowl, maker not known.

R O: three bowls, one of which has a muffle deposit and firing fault. There are three possible makers known in St Olave's parish: Richard Onben, 1716, Richard Owen (1), 1708-11, Richard Owen (2), 1719-21.

E R: one bowl, possibly Edward Randall, 1719.

I R: one bowl, possibly John Robertson, 1721. St Olave's, or James Roome, 1730.

T R: one bowl, possibly Thomas Ram, 1718, Southwark.

E S: one bowl, maker not known for this period.

H S: two bowls, possibly Henry Stenard, 1724, St Olave's or Henry Skinner, 1703.

I S: eight bowls, four of which have a muffle deposit or 'red' fired surfaces. Several possible makers (see Oswald 1975, 145).

M S: one bowl, possibly Mark Stone, 1727, St Olave's.

W S: one bowl, Possibly William Simkin, 1709, William Simson, 1715, William Symkins, 1699, all St Olave's (but see also Oswald 1975, 146).

I T: one bowl, possibly John Thorpe, 1717, Whitechapel, but apprenticed to Abel Horton a local pipe maker.

I W: 243 bowls (additionally nine are marked I ?, one bowl marked ?I W and four marked ? W), possibly local St Olave's pipe maker; John Whitehead, 1721 (but See Oswald 1975, 148 for a more extensive list of London pipe makers with these initials). Includes wasters.

P W: one bowl, possibly Peter Woodhouse, 1696, but not necessarily local.

T W: one bowl, see Oswald (1975, 149), for several possible contemporary London makers.

OS10 bowls with stamps or further decoration

Crowns on the heel and no initials: two bowls.

Crowned flower on the heel, one bowl.

Crowned harps on the heel: one bowl

Crowned initials on the heel:

? ?: one bowl, where the initials are illegible.

R M: one bowl, probably Richard Manby (1), Whitechapel, 1701-23, Richard Manby (2), Hermitage Bridge and Whitechapel, 1729-63,

W M: one bowl, possibly William Mitchell, 1700, Bermondsey, but probably William Manby (2) 1719-63, St Anne's, Limehouse.

With relief flowers on the heel: one bowl.

OS10 bowls with stamps (not initialled on the heel)

R B: two bowls with oval stamp and large R B initials in relief on the back of the bowl, R B: almost certainly a local pipe maker by the number of different bowls with these initials, but not documented in St Olave's. Possibly Robert Branson, 1689-1717, Robert Bowes, 1719, R. Barrett, 1719.

I K: four bowls, with a circular relief stamp on the back of the bowl with the initials I K (one possibly I T) on the back of the bowl. I K possibly John Knight 1712, St Olave's, John King, 1733-40.

R K: 58 bowls. Three circular incuse stamps represented. Stamp 1 is small with a serrated internal border and the initials R · K with foliage above and below (61 bowls). Stamp 2 is small and has the initials R · K above two crossed leaves (one bowl). Stamp 3 is small and has only the initials R K (one bowl), waster and has exploded in the kiln. Fifteen bowls show evidence for being wasters or have firing faults with either muffle or encrustations sticking to the bowls, are misfired and includes one with a crack. Probably Robert Knight (2), 1714-25.

W L: one bowl with a circular relief stamp on the back of the bowl with the initials W L separated by a ?sword. Possibly William Long, 1689-1720 or William Lamb, 1698-1721.

OS10 bowls with different initials on the heel to the stamps on the back

These bowls almost certainly indicate that clay tobacco pipe moulds were sold on to another pipe maker who personalised them with their own stamp.

A H/R B: two bowls with AH on the heel, probably Abel Horton, 1717-22, and circular R B relief stamp on the back of the bowl, R B presently unknown. One of these bowls has a 'red' fired surface and a muffle deposit.

M B/I H: two bowls, M B marked on the heel and circular incuse stamp on the back of the bowl with initials I K, possibly Michael Brittain, 1725 and John Knight, 1712.

T R/R B: one bowl, T R initials on the heel, circular incuse stamp on the back of the bowl 'R B'. T R: Thomas Ram, 1718, Southwark. R B: Robert Bowes, 1719, R. Barrett, 1719, Richard Bryant, 1733-40.

1730-1780

OS12: 38 heeled bowls in total with identifying thin stems and bowls. Initialled examples are

? ?: two bowls where the initials are illegible.

R ?: one bowl where the family name is smudged.

I B: one bowl, see Oswald (1975, 131) for numerous known pipe makers working in this period, but none are specifically located in Bermondsey or Southwark.

I H: one bowl, possibly John Harvey, 1731 or John Holtie, 1732, both St Olave's.

I I: one bowl, possibly John Jarman (2), 1732-49, but probably working in Westminster.

I K: one bowl, possibly John King (2), 1733-40.

T R: three bowls, possible unknown local pipe maker.

I ?R/B: one bowl, family name uncertain.

I S: three bowls, see Oswald (1975, 145) for several possible pipe makers, but none specifically local.

I/T S: one bowl, forename uncertain.

M S: one bowl, possibly Mark Stone, 1727, St Olave's.

I W: one bowl, possibly John Whitehead, 1721, St Olave's, see also Oswald 1975, 148, for other possible London pipe makers.

T W: two bowls, but one has the forename illegible, possibly Thomas Woolard, 1757, Southwark.

OS22: four spurred bowls, none initialled.

1760-1800

OS23: one spurred bowl with the Hanoverian coat of arms and I P in relief on the front of the bowl. I P maker possibly John Pownall, St Margaret's Westminster, 1748, John Poyt, 1754 or John Payne, 1768, Wapping. These bowls are noted in Westminster and may indicate the location of this pipe maker.

1780-1830

AO27: three bowls, one represented only by its square heel. All are plain but one is marked.

S L: possibly Samuel Lewis, 1774-1805, who worked at Oxford St, Lambeth, Southwark and also near by at Horsley Down.

1820-1860+

AO28: two spurred bowls, one of which has oak leaf borders on the front and back of the bowl. One is marked.

T L: represented by a spur and the L may be remoulded over an earlier letter. Possibly Thomas Leach, 1828, Horsley Down, 1858-67, Whitechapel Road or Thomas Lewis, 1823-32, Horsley Down, 1850-54, Bermondsey.

1840-1880

AO29: one heeled bowl with oak leaf and grass borders on the front and back of the bowl. The heel may be initialled but if so these are blurred and illegible.

Undated

There are 33 bowls that are so fragmentary that they cannot be reliably assigned to a type.

Non-local bowl types

c. 1650-1660

S8: two Southern England type bowls, one has a heart-shaped heel.

Import

c.1770

AT29: one Dutch heeled bowl. Very nicely burnished, on the heel is S over the shield of Gouda. On the underside of the heel is a small circular relief stamp with a crowned L, which may stand for 50.

CLAY TOBACCO PIPE PRODUCTION WASTE

The majority of clay tobacco pipe production waste comes from fills [328] and specifically fill [340] dumped in tanning pit [329].

Muffle

This is associated with the kiln and usually formed a sealed chamber that protected the clay tobacco pipes from the smoke of the fuel. The muffle chamber was built of pipe clay with clay tobacco pipe fragments, usually as stems laid in 'courses', aligned in the same direction, and used to give the structure strength. There are 158 fragments of muffle, weighing 2370g. Not all the muffle contains stems or their impressions and no bowls are encased in the pipe clay, which would further date the muffle. Some fragments are thin walled, possibly from laminating during firing and have either purplish reddish purple surfaces or slag-like deposits resulting from firing of the kiln and the formation of self-glazes. Other fragments of muffle had remnants of possible buttresses, which were projections on the external wall of the muffle chamber and similar features have been noted at the Arcadia Buildings, Southwark muffle kiln (Pacey 1996, 25-7).

Kiln wall

One fragment of kiln wall is represented (550g) and consists of part of a brick (fabric 3034, B. Suds pers. comm.) and the internal lining of pipe clay with pipe stems which indicates that this was the internal surface of the outer pipe kiln wall. The lining is covered in a slag like deposit resulting from a self-glaze formed in the firing of the kiln.

Trimming rings

There are 22 fragments (481g) of trimming rings of which only two conjoin. They take the form of sinuous sausages, sometimes with discrete (?finger nail) impressions. All the fragments of trimming rings are fired and can have kiln encrustations, reddish purple-fired surfaces and self-glazes. Therefore, the trimming rings, resulting here from the trimming of clay exuded from the mould, may have been fired and used for kiln furniture.

?Rack

One probable rack is recorded (Small find <8>, 86g) and consists of a roughly formed ball of clay with three clay pipe stems inserted into one side. These may have been used inside the kiln, but their function is uncertain (Pacey 1996, 65).

DISTRIBUTION

The distribution of the clay tobacco pipes are shown in Tables 2-4, which show contexts and their phasing where the material occurs, the date range of the bowl types and the date of the latest type. The types of pipes are also shown for each context and in brackets the maker marked examples and an indication of stamps are given. A spot date for each context is provided. Site TBI01 only had one context that produced clay tobacco pipes and this was deposit [1] (phase 14) with four stems broadly dated 1580-1910. The clay tobacco pipes from fills [328] and [340] from tanning pit [329] are discussed in some detail to characterise the production waste.

Context	Phase	No. of fragments of clay tobacco pipe bowls	Date range	Latest dated clay tobacco pipe bowl	Clay tobacco bowl type and makers initials	Spot date
854	14	4	1700-1740	1700-1740	X1 AO10, x3 OS10 (??, M B, AH).	1700-1740
857	12	3	1660-1680	1660-1680	x1 AO15.	1660-1680
860	11	14	1660-1740	1700-1740	x4 AO15, x1 AO18, x2 AO19, x4 AO22 (I I; stamp), x1 OS10.	1700-1710
861	12	1			Stem.	1580-1910
869	13	2	1660-1710	1680-1710	x1 AO18, x1 AO21.	1680-1710
873	13	2			Stems.	1580-1910
875	13	1	1700-1740	1700-1740	X1 OS10.	1700-1710
896	12	2	1700-1740	1700-1740	X1 OS10.	1700-1710
921	13	3	1650-1680	1660-1680	X1 S8, x1 AO13.	1650-1660
924	12	1	1700-1740	1700-1740	X1 OS10 (O).	1700-1740
928	12	58	1680-1740	1700-1740	X2 AO19, x56 OS10 (x1 ? ?, x2 I ?, x1 A A, x1 R B; stamp, x2 I H, x2 I K, x1 ? M, x1 I R, x1 I T, x 7 I W).	1700-1740
985	13	1			Stem.	1580-1910
987	12	1	1660-1680	1660-1680	X1 AO15.	1660-1680
989	11	23	1700-1780	1730-1780	X 1 AO25, X17 OS10 (x9 A H, x1 E S, x1 S G, x1 W E).	1730-1740
990	11	1	1700-1740	1700-1740	x1 OS10 (A/R R/B, stamp).	1700-1740
991	11	1	1700-1740	1700-1740	X1 OS10.	1700-1740
996	11	2	1700-1770	1700-1770	X1 AO25, x1 OS10 (x1 AH).	1700-1740
1000	11	6	1660-1680	1660-1680	X3 AO15.	1660-1680
1041	11	1	1660-1680	1660-1680	X1 AO15.	1660-1680

Table 2: TBA03: Distribution of clay tobacco pipes.

Context Phase	No. of fragments	Date range of clay tobacco pipe bowls	Latest dated clay tobacco pipe bowl	Clay tobacco bowl type and makers initials	Spot date
1182	12	1	1660-1680	1660-1680 X1 AO18.	1660-1680
1184	12	2	1780-1830	1780-1830 X1 AO27.	1780-1830
1209	11	2		Stem.	1580-1910
1211	11	1		Stem.	1580-1910
1215	11	2	1660-1710	1660-1710 X1 AO15/19.	1550-1710
1217	11	1		Stem.	1580-1910
1223	11	1		Stem.	1580-1910
1273	12	2		Stems.	1580-1910
1275	Void	2		Stems.	1580-1910
1277	12	6	1700-1770	1700-1740 X1 AO25, x1 OS10 (A H).	1700-1740
1285	12	2		Stems.	1580-1910
1287	11	1	1700-1740	1700-1740 X1 OS10.	1700-1740
1292	11	9	1780-1830	1780-1830 X2 AO27 (S L).	1780-1830
1415	11	2	1700-1770	1700-1770 X1 AO25.	1700-1770
1472	12	2	1660-1680	1660-1680 X1 AO15.	1660-1680
1477	12	3	1660-1680	1660-1680 X1 AO13, x1 AO15, x1 AO18.	1660-1680
1479	12	1		Stem.	1580-1910
1481	11	4	1700-1770	1700-1770 X1 AO25.	1700-1770
1482	12	3		Stems.	1580-1910
1506	11	1		Stem.	1580-1910
1594	14	1		Stems.	1580-1910
1650	14	5		Stems.	1580-1910
1667	14	1		Stem.	1580-1910
1691	13	1	1660-1680	1660-1680 X1 AO15.	1660-1680
1697	13	3		Stems.	1580-1910
1744	12	1	1700-1740	1700-1740 X1 OS10 (M B).	1700-1770
1747	11	6		Stems.	1580-1910
1755	11	2		Stems.	1580-1910
1756	11	1		Stems.	1580-1910
1796	11	32	1660-1680	1660-1680 X1 AO10, x1 AO13, x4 AO15.	1660-1680
1797	11	4	1640-1660	1640-1660 X1 AO10.	1640-1660
1823	9	3		Stems.	1580-1910
1829	11	20	1640-1660	1640-1660 X3 AO10.	1640-1660
1831	11	1	1640-1660	1640-1660 X1 AO9.	1640-1660
1834	11	2		Stems.	1580-1910
1835	11	3		Stems.	1580-1910
1836	11	3	1660-1680	1660-1680 X2 AO15.	1660-1680
1837	11	15		Stems.	1580-1910
1838	11	64	1640-1660	1650-1660 X2 AO9, x11 AO10, x1 S8.	1650-1660
1839	11	15	1640-1660	1640-1660 X2 AO9, x1 AO10, x1 AO9/10.	1640-1660
1841	11	1	1700-1770	1700-1770 X1 ?AO25.	1700-1770
1859	11	1	1610-1640	1610-1640 X1 ?AO5.	1610-1640

Table 3: TBB03: Distribution of clay tobacco pipes.

Context	Phase	No. of fragments	Date range of clay tobacco pipe bowls	Latest dated clay tobacco pipe bowl	Clay tobacco bowl type and makers initials	Spot date
28	11	1	1680-1710	1680-1710	X1 AO22.	1680-1710
29	11	1			Stem.	1580-1910
33	13	1			Stem.	1580-1910
52	13	5	1700-1770	1700-1770	X1 AO25, x1 OS10 (? ?).	1700-1740
68	14	1			Stem.	1580-1910
71	15	1			Stem.	1580-1910
74	11	4	1660-1680	1660-1680	X1 AO15.	1660-1680
78	11	4			Stems.	1580-1910
96	13	5			Stems.	1580-1910
97	11	3	1700-1770	1700-1770	X1 AO25/26.	1700-1800
229	13	3	1820-1860	1820-1860	X1 AO28 (T L).	1820-1860
231	Void	8	1660-1860	1820-1860	X1 AO15, x1 AO19, x1 AO28.	1820-1860
232	14	2			Stems.	1580-1910
233	15	1	1840-1880	1840-1880	X1 AO29.	1840-1880
249	12	3	1680-1710	1680-1710	X1 AO22.	1680-1710
264	13	18	1660-1710	1680-1710	X1 AO15, x1 AO22.	1680-1710
276	14	4			X 1 18 th century bow1 frag.	?18th C.
302	14	10	1700-1770	1700-1770	X1 AO25.	1700-1770
308	12	2	1660-1680	1660-1680	X1 AO15	1660-1680
309	12	1	1700-1740	1700-1740	X1 OS10.	1700-1740
311	12	16	1680-1780	1730-1780	X1 ?AO20, x2 OS10, x3 OS12 (I K).	1730-1780
312	12	170	1660-1780	1730-1780	X1 AO15, x15 OS10 (M B, R B; stamp, I/M K/B; stamp, H S, I W), x28 OS12 (? ?, R ?, I B, I H, I I, I ?R/B, T R, H S, I S, ?I/T S, T W), X1 OS27.	1730-1780
318	12	4	1660-1800	1770-1800	X1 OS10 (T R), X1 OS23 (I P).	1760-1780
320	12	62	1700-1780	1730-1780	X 23 OS10 (M B, N ?G, R K; stamp, E R, I S, T W, T/R R/B; stamp), x1 OS12, x1 OS27.	1730-1740
328	12	37	1700-1770	1700-1770	X2 AO25, X17 OS10 (I ?, W ?G, A H, R K; stamp, H S, I W).	1700-1740
340	12	2318	1700-1760	1700-1740	X18 AO25, x 659 OS10 (·, ?, I ?, I C/G, A H, A/R H/B (stamp), H ?G, I K, R K (stamp), ?I T/K, I L, W L (stamp), ? M, S M, W M, I O, R O, I S, W S, I W, P W, ? W), X3 OS27.	1700-1740
356	12	14	1700-1780	1730-1780	X2 OS10 (R M), x1 OS12.	1730-1740
361	11	15	1700-1740	1700-1740	X5 OS10.	1700-1740
370	11	25	1660-1740	1700-1740	X1 AO13, x13 AO15, x2 AO20 (W P), x1 AO22, x1 OS10.	1700-1710
371	12	3	1730-1780	1730-1780	X1 OS12, X1 OS22.	1730-1780
374	12	2			X1 18 th century bowl frag.	18th C?
379	12	5	1730-1780	1730-1780	X2 OS12, x3 OS22.	1730-1780
382	12	1	1730-1780	1730-1780	X1 OS12 (M S).	1730-1780
387	11	1	1660-1680	1660-1680	X1 AO15.	1660-1680
388	11	1			Stem	1570-1910
393	11	2			Stems.	1570-1910

Context	Phase	No. of fragments	Date range of clay tobacco pipe bowls	Latest dated clay tobacco pipe bowl	Clay tobacco bowl type and makers initials	Spot date
396	11	1			Stem.	1570-1910
397	11	2	1680-1710	1680-1710	X1 AO20.	1680-1710
402	10	4	1660-1680	1660-1680	X1 AO15.	1660-1680
426	11	8	1660-1680	1660-1680	X3 AO15.	1660-1680
428	11	4	1660-1710	1680-1710	X1 AO15, x1 AO19, x1 AO20 (W P), x1 AO22	1680-1710
435	12	52	1700-1760	1700-1760	X19 OS10 (W B, I K; stamp, I S, M S, I W), 1 OS27.	1700-1740
538	9	3			Stems.	1570-1910
567	15	8	1680-1710	1680-1710	X5 AO21.	1680-1710
585	3	1			Stem.	1570-1910

Table 4: TWG00: Distribution of clay tobacco pipes.

The clay tobacco pipes and production waste from fills [328] and [340] of tanning pit [340] are shown in Table 5. Production waste (other than the clay tobacco pipes) is almost entirely restricted to these fills and are described above and not repeated here. The fills of the tanning pit almost certainly contain clay tobacco pipes from domestic use besides being production waste. Of the 1259 stem fragments, 310 show evidence of being part of the clay tobacco pipe production process, with evidence for firing faults or having a muffle deposit, probably indicating that they were incorporated into the kiln structure. The main firing fault with the stems (100 examples) is 'red' fired surfaces together with muffle, followed by 60 examples with 'red' fired surfaces. Encrusting of stems (resulting either from kiln self-glazes or possibly over-firing of muffle) occurs on 47 stems, whilst another seven examples are fired to other colours, mostly grey and may not have passed the quality control process. Other stems have a combination of different firing defects. One example has a clear to white opaque glaze possibly resulting from a self-glaze. Of the 187 nibs, only 27 show firing faults, mostly having a miss-fired red surface (fifteen examples), followed by seven examples with red-fired surfaces and muffle and five encrusted stems. Stems in these fills also include notably curved examples, and two are decorated, either pinched, or with a rouletted line around the circumference in conjunction with a band of diagonal lines.

Turning to the bowls, there are principally only two types represented, the heeled OS 10, (which also probably includes the AO25 fragments) and the American export type, the OS27. Of the OS10 bowls the most frequent maker marked pipe is I W, probably for John Whitehead, 1721, St Olave's with 233 examples, but none have stamps. Of these bowls, 21 have manufacturing or firing faults. The manufacturing fault is a finger dent on the heel resulting from poor handling of the pipe being taken from the mould. The main firing fault with these bowls resulted in red fired surfaces (nine examples), whilst cracking, encrusting and muffle concretions or a combination of these, including one with a distorted bowl, are present in minor numbers. Where muffle occurs on

these and on other bowls from the tanning pit fills, then it is often on the front of the bowl which may be an indication of the stacking pattern in the kiln.

The R K bowls account for 62 examples and were probably made by Robert Knight (2), 1714-25 and a number of these appear to be wasters. Only one bowl with initials on the heel has a muffle deposit and red surfaces. R K bowls with stamp 1 are the main type of bowl to have firing faults with fifteen examples, the main firing fault being red surfaces and muffle adhering to their surfaces. Other examples have a combination of firing faults that include cracked and exploded examples (in the kiln from too much moisture in the clay). The single case of an R K bowl with stamp 3 has an exploded firing fault.

Other marked bowls with firing faults in low numbers in this group are represented by A H (two bowls), A H with an R K stamp 1 (one example), M S (one example), R O (one example), I S (two examples) and S W (one example). The firing faults here are mostly reddened surfaces with muffle adhering. These bowls may not reflect clay tobacco pipe makers associated with the production waste, but represent domestic waste that was collected and incorporated into the kiln structure.

Unmarked bowls account for 307 cases four of which show a manufacturing fault where the heel has been over trimmed or broke off during the finishing process, but which were fired nevertheless (one with a resultant crack) but subsequently discarded during the quality control process. Of these unmarked bowls, 22 have firing faults, most have 'red' fired surfaces and muffle, whilst single examples have an encrustation or the bowl is warped.

Of the American export type bowls there are three examples, of which one is covered in a reddish purple slag that almost certainly indicates that it was in contact with the firing chamber of the kiln, but this type of bowl was almost certainly not part of the repertoire of the clay tobacco pipe makers associated with the production waste found locally.

It therefore seems likely that at least two pipe makers are represented amongst the waster population found in tanning pit [329]; probably John Whitehead, documented in 1721 and Robert Knight (2), 1714-25. One of these two pipe makers, or both of them, was also making unmarked clay tobacco pipes. Figure 1 shows the possible St Olave's parish contemporary pipe makers and their working dates according to baptism registers (Walker 1981), but the pipe makers could have been working before or after their first and last child are recorded. It would therefore seem most likely from the evidence of the known working periods that the tanning pit was backfilled with waste from clay tobacco pipe production during c. 1720-25.

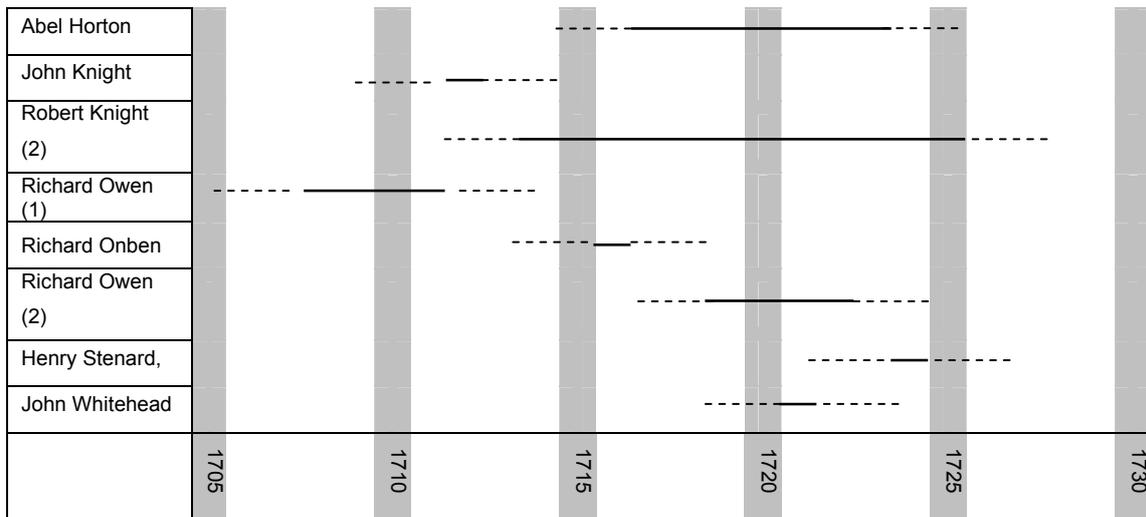


Figure 1: Working periods of clay tobacco pipe makers found on marked pipes recovered from fill [340] of pit [329].

Bowl type	Date range	First name	Last name	Decoration	Fill [328]	Fill [340]
					No.	No.
AO25	1700-1770				2	18
OS10	1700-1740				10	307
OS10	"	?				1
OS10	"	.	.			2
OS10	"	I	?		1	6
OS10	"	I	C/G			1
OS10	"	H	G?			1
	"	?W	G		1	
OS10	"	A	H		1	10
OS10	"	A/R	H/B	Stamp (R B)		1
OS10	"	H	S		1	
OS10	"	I	K			3
OS10	"	I	K	Stamp		2
OS10	"	I/T	K	Stamp		1
<i>Sub-total (I K bowls)</i>	"					6
OS10	"	R	K			2
OS10	"	R	K	Stamp 1	1	58
OS10	"	R	K	Stamp 2		1
OS10	"	R	K	Stamp 3		1
<i>Sub-total (R K bowls)</i>	"					62
OS10	"	I	L			1
OS10	"	W	L	Stamp		1
OS10	"	?	M			1
OS10	"	S	M			5
OS10	"	W	M	Crowned initials		1
OS10	"	I	O			1

Bowl type	Date range	First name	Last name	Decoration	Fill [328]	Fill [340]
OS10	"	R	O			3
OS10	"	I	S			5
OS10	"	W	S			1
OS10	"		W			1
OS10	"	?	W			4
OS10	"	I	W		1	233
OS10	"	P	W			1
AO24	1700-1740					3
unidentified						15
<i>Sub-total (bowls)</i>						691
Nib						187
Stem					31	1257
Stem, pinched						1
Stem with rouletted decoration						1
<i>Sub-total (stems)</i>						1259
Total					31	2137
Kiln furniture, slag and muffle						
Kiln wall						1
Muffle						156
rack						1
?slag						1
Trimming rings					1	20
Unidentified						2
Total					1	181

Table 5: TWG00: quantification by fragment count of clay tobacco pipes and production waste from fills [328] and [340] of pit [329].

SIGNIFICANCE OF THE COLLECTION

The clay tobacco pipes are of significance at a local level. The pipes follow the chronology and typology for the London area, but there is a very small amount of non-local pipe bowls and an imported Dutch example. The clay tobacco pipes cover the period between c.1610-1880. Clay tobacco pipes start to appear on the site in significant numbers from c.1660 and may reflect the development of this area of the Thames waterfront during this period. Unusually, none of the bowls dated up to c. 1680 are marked and this may reflect the socio-economic status of the residents of the site. However, two c. 1680-1710 bowls carry marks and are not commonplace in London, but from c.1700 the bowls are more frequently initialled.

Of particular significance is the dumping of the c. 1720-25 dated clay tobacco pipe wasters and production waste largely restricted to TWG00 fills [328] and [340] of tanning pit [329]. Despite London being a major centre for the clay tobacco pipe production, little direct evidence of this industry is known from the archaeological evidence (see Pacey 1996, Appendix 1, 197-231).

In Southwark, a c.1660-80 kiln was recorded at Arcadia Buildings (site code AB78) and a c.1700-70 heavily truncated kiln at 15-23 Southwark Street (site code: CB80). On the north bank of the Thames a c. 1660-80 kiln was found at Aldgate (AL74), while other production material is noted in small amounts at 21-9 Mansell Street (MAN82), 78 Cutler Street (CUT78) and 68-72 Cornhill (CNL81).

Other assemblages of clay tobacco pipes have been recorded from the vicinity, notably from previous excavations at 167 Tower Bridge Road (Jarrett 1999a) and Lambeth College, Queen Elizabeth Street/Tower Bridge Road (QET99) (Jarrett 1999b).

POTENTIAL

The clay tobacco pipes have the potential to date the contexts they were found in. There is some evidence for the typological and local development of the different types of bowls in the site stratigraphy. A number of clay tobacco pipes merit illustration or photographing, either because they are non-local rare finds in London or are variants of the usual type.

The clay tobacco pipe production waste greatly adds to the knowledge of this industry in London and can add to the understanding of associated technology involved in the process of making clay tobacco pipes. The wasters from tanning pit [329] also provide information on manufacturing and firing faults and what quality control was employed in production.

RESEARCH AIMS

- What is the profile of the clay tobacco pipe typology of the assemblage at 169 Tower Bridge Road and how does it compare to other local and London sites?
- Can the stratigraphic distribution of the 18th-century marked bowls improve the dating of the production periods of the pipe makers?
- What does the production waste tell us regarding the technology of the early 18th-century clay tobacco pipe industry in London?
- What criteria were involved in the quality control for clay tobacco pipe production?
- Can stem bore diameter dating help to refine the deposition dating of the clay tobacco pipe production waste recovered from fills [328] and [340] of pit [329]?

RECOMMENDATIONS FOR FURTHER WORK

At least 23 clay tobacco pipe bowls require illustration and photographs should be used to illustrate the kiln furniture and ring trimming and firing faults. Time should also be allowed for stem bore diameter dating for fills [328] and [340] of pit [329]. Additional documentary research would be useful to expand on the working dates of the master clay tobacco pipe makers.

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APPENDIX 9

GLASS ASSESSMENT

John Shepherd

ASSESSMENT

Two hundred and fifty-one fragments of glass were submitted for identification. All are very fragmentary and no large assemblages are included.

All are post-medieval in date, especially late 17th century or later, apart from a single medieval fragment (TBA03 [899]), a base of a urinal. These urinals were not only used as 'vases de nuit' but were also employed for medical purposes, in particular uroscopy, or the diagnosis of ailments from the inspection of urine. Vessels in this form were made as late as the early seventeenth century but they also appear as early as the fifteenth century.

Two bottle seals are present – one with a double headed eagle and the letters VPC (associated with English based Baltic trade concerns, perhaps ? – TBB03 [1755]) - the other a Pyrmont water bottle - TWG00 [318].

A night-light is of interest, only because such vessels are rarely recorded in archaeological contexts (TWG00 [361]).

RECOMMENDATIONS

This assemblage as a whole is too fragmentary to be worthy of full report. It is suggested to highlight the urinal fragment, if necessary, but to carry out no further work on the remainder of the glass.

Site code	Context	no. frags	Phase date	Colour	Form	Technique	Date	Full catalogue entry	Requiring illustration
TWG00	33 Tr 2	1		Olive green	English wine bottle, upper part	free-blown	L18th or E19th C.	n	n
TWG00	52	10		Natural green	Window	cylinder blown	Post-medieval	n	n
TWG00	74	1		Colourless	Pharmaceutical phial, body frag	free-blown	18th or 19th C.	n	n
TWG00	78	2		Natural green	Window	cylinder blown	Post-medieval	n	n
TWG00	78	1		Olive green	English wine bottle, body frag	free-blown	L17th to 19th C.	n	n
TWG00	79 spit 3	1		Colourless	Stemmed drinking glass, base	free-blown	17th C.	?	?
TWG00	97	1		Olive green	English wine bottle, base	free-blown	L17th or 18th C.	n	n
TWG00	229	1		Natural green	Bottle, hex medicine body	machine-made	19th or E20th C	n	n
TWG00	229	1		Olive green	Bottle, cylindrical	machine-made ?	19th or E20th C	n	n
TWG00	231	4		Natural blue	Window	free-blown	Post-medieval	n	n
TWG00	232	1		Natural green blue	Bottle, rectangular with chamfered corners	machine-made	L19th or E20th C.	n	n
TWG00	232	1		Blue	Bottle, cylindrical medicine base	machine-made	L19th or E20th C.	n	n
TWG00	233	1		Olive green	English wine bottle, body frag	free-blown	L17th to 19th C.	n	n
TWG00	233	1		Colourless	Dish/bowl	mould-pressed	19th or E20th C	n	n
TWG00	249	1		Natural green	Bottle, upper part	machine-made	L19th or E20th C.	n	n
TWG00	264	1		Olive green	English wine bottle, body frag	free-blown	L17th to 19th C.	n	n
TWG00	264	1		Natural green	Window	cylinder blown	Post-medieval	n	n
TWG00	297	4		Natural green blue	Window	cylinder blown	Post-medieval	n	n
TWG00	311	2		Olive green	English wine bottle, body frags	free-blown	L17th to 19th C.	n	n
TWG00	311	1		Olive green	English wine bottle, base	free-blown	L17th or 18th C.	n	n

TWG00	312	1		Olive green	English wine bottle, body frag	free-blown	L17th to 19th C.	n	n
TWG00	312	2		Natural green	Window	cylinder blown	Post-medieval	n	n
TWG00	318	3		Olive green	English wine bottle, bases	free-blown	L18th or E19th C.	n	n
TWG00	318	10		Olive green	English wine bottle, body frags	free-blown	L17th to 19th C.	n	n
TWG00	318	1		Olive green	English wine bottle, upper part	free-blown	L17th or 18th C.	n	n
TWG00	318	1		Olive green	English wine bottle, base, square-sectioned	mould-blown	18th or 19th C.	n	n
TWG00	318	1		Olive green	Bottle seal - PYRMONT WATER	applied	17th or 18th C.	?	?
TWG00	320	1		Olive green	English wine bottle - complete squat	free-blown	L17th or E18th C.	y	y
TWG00	320	4		Olive green	English wine bottle, upper parts	free-blown	L17th or 18th C.	n	n
TWG00	320	1		Olive green	English wine bottle, base	free-blown	L17th or 18th C.	n	n
TWG00	320	6		Olive green	English wine bottle, body frags	free-blown	L17th to 19th C.	n	n
TWG00	340	1		Natural green blue	Waste - moiil	free-blown	Post-medieval	y	y
TWG00	340	1		Natural green	Pharmaceutical phial, rim	free-blown	17th or 18th C.	n	n
TWG00	356	6		Natural green	Window	cylinder blown	Post-medieval	n	n
TWG00	356	1		Olive green	English wine bottle, body frag	free-blown	L17th to 19th C.	n	n
TWG00	356	3		Natural green	Vessel	free-blown	Post-medieval	n	n
TWG00	356	1		Olive green	English wine bottle, body frag	free-blown	L17th or 18th C.	n	n
TWG00	361	1		Natural green	Window	cylinder blown	Post-medieval	n	n
TWG00	361	1		Natural green	Lamp/night light - 6 frags	free-blown	17th or 18th C.	y	y
TWG00	361	1		Natural green	Pharmaceutical phial, upper part	free-blown	17th or 18th C.	n	n
TWG00	361	4		Natural green	Vessel	free-blown	Post-medieval	n	n

TWG00	361	1		Natural green	Pharmaceutical phial, base, large	free-blown	17th or 18th C.	n	n
TWG00	361	5		Natural green	Window	cylinder blown	Post-medieval	n	n
TWG00	366	1		Natural green	Window	cylinder blown	Post-medieval	n	n
TWG00	370	2		Natural green	Window	cylinder blown	Post-medieval	n	n
TWG00	370	1		Olive green	English wine bottle, body frag	free-blown	L17th to 19th C.	n	n
TWG00	371	1		Natural green	Pharmaceutical phial, body frag	free-blown	17th or 18th C.	n	n
TWG00	371	2		Colourless	Vessel	free-blown	Post-medieval	n	n
TWG00	371	1		Natural green blue	Pharmaceutical phial, base	free-blown	17th or 18th C.	n	n
TWG00	371	1		Olive green	English wine bottle, base	free-blown	L17th or 18th C.	n	n
TWG00	374	1		Natural green	Vessel	free-blown	Post-medieval	n	n
TWG00	379	1		Olive green	English wine bottle, body frag	free-blown	L17th or 18th C.	n	n
TWG00	382	2		Natural green	Pharmaceutical phial, body frags	free-blown	17th or 18th C.	n	n
TWG00	382	6		Olive green	English wine bottle, body frags	free-blown	L17th to 19th C.	n	n
TWG00	388	2		Natural green	Window	cylinder blown	Post-medieval	n	n
TWG00	397	1		Olive green	English wine bottle, body frag	free-blown	L17th to 19th C.	n	n
TWG00	397	1		Olive green	English wine bottle, body frag	free-blown	L17th to 19th C.	n	n
TWG00	405	1		Natural green	Window	cylinder blown	Post-medieval	n	n
TWG00	416	1		Natural green	Window	cylinder blown	Post-medieval	n	n
TWG00	416	1		Olive green	English wine bottle, body frag	free-blown	L17th to 19th C.	n	n
TWG00	435	2		Olive green	English wine bottle, body frags	free-blown	L17th to 19th C.	n	n
TWG00	435	2		Natural green	Window	cylinder blown	Post-medieval	n	n
TWG00	435	2		Natural blue	Window	cylinder blown	Post-medieval	n	n
TWG00	435	1		Natural green	Pharmaceutical phial, rim	free-blown	17th or 18th C.	n	n
TWG00	435	1		Colourless	Pharmaceutical phial, base	free-blown	18th or 19th C.	n	n

TWG00	435	1		Natural green blue	Inkwell	free-blown	Post-medieval	n	n
TWG00	435	1		Olive green	English wine bottle, upper part	free-blown	L17th or 18th C.	n	n
TWG00	435	1		Olive green	English wine bottle, base, flattened oval	free-blown	L17th or 18th C.	n	n
TWG00	585	1		Olive green	English wine bottle, body frag	free-blown	L17th to 19th C.	n	n
TWG00	unstrat	2		Olive green	English wine bottle, bases	free-blown	L17th or 18th C.	n	n
TWG00	unstrat	1		Olive green	English wine bottle, upper part	free-blown	L17th or 18th C.	n	n
TWG00	unstrat	5		Olive green	English wine bottle, body frags	free-blown	L17th or 18th C.	n	n
TWG00	unstrat	1		Natural green	Pharmaceutical phial, rim	free-blown	17th or 18th C.	n	n
TWG00	unstrat	6		Natural green	Window	cylinder blown	Post-medieval	n	n
TBA03	857	1		Olive green	English wine bottle, body frag	free-blown	L17th to 19th C.	n	n
TBA03	879	1		Olive green	Bottle, cylindrical	free-blown	E19th C.	n	n
TBA03	880	2		Olive green	Bottle, cylindrical	machine-made	19th or E20th C	n	n
TBA03	880	3		Natural green	Bottle, cylindrical	machine-made	19th or E20th C	n	n
TBA03	880	1		Olive green	English wine bottle, body frag	free-blown	L17th to 19th C.	n	n
TBA03	880	1		Olive green	Bottle, cylindrical	free-blown	E19th C.	n	n
TBA03	880	2		Natural green	Bottle, square with chamfered corners	machine-made	L19th or E20th C.	n	n
TBA03	896	2		Olive green	English wine bottle, body frags	free-blown	L17th to 19th C.	n	n
TBA03	896	1		Natural green blue	Window	cylinder blown	Post-medieval	n	n
TBA03	899	1		Natural green with deep surface decomposition	Urinal, base	free-blown	Medieval	y	y
TBA03	928	1		Olive green	English wine bottle, body frag	free-blown	L17th to 19th C.	n	n

TBA03	928	1		Olive green	English wine bottle, upper part	free-blown	L17th or 18th C.	n	n
TBA03	928	3		Olive green	English wine bottle, body frags	free-blown	L17th to 19th C.	n	n
TBA03	928	2		Natural green	Pharmaceutical phial, bases	free-blown	17th or 18th C.	n	n
TBA03	928	1		Natural green	Pharmaceutical phial, upper part	free-blown	17th or 18th C.	n	n
TBA03	941	1		Natural green blue	Window	cylinder blown	Post-medieval	n	n
TBA03	989	3		Olive green	English wine bottle, body frags	free-blown	L17th to 19th C.	n	n
TBA03	989	1		Olive green	English wine bottle, base, flattened oval	free-blown	L17th or 18th C.	?	?
TBA03	989	1		Olive green	English wine bottle, upper part	free-blown	L17th or 18th C.	n	n
TBA03	989	1		Olive green	English wine bottle, base	free-blown	L17th or 18th C.	n	n
TBA03	996	1		Olive green	English wine bottle, upper part	free-blown	18th or E19th C.	n	n
TBB03	1166	1		Natural green blue	Vessel	free-blown	Post-medieval	n	n
TBB03	1246	1		Natural green blue	Bottle, square	mould-blown	L17th or 18th C.	n	n
TBB03	1287	3		Olive green	English wine bottle, body frags	free-blown	L17th to 19th C.	n	n
TBB03	1287	3		Natural green	Window	cylinder blown	Post-medieval	n	n
TBB03	1292	2		Olive green	English wine bottle, upper part	free-blown	L18th or E19th C.	n	n
TBB03	1292	1		Olive green	Bottle, cylindrical	free-blown	L18th or E19th C.	n	n
TBB03	1292	6		Olive green	English wine bottle, body frags	free-blown	L17th to 19th C.	n	n
TBB03	1292	1		Natural green blue	Window	cylinder blown	Post-medieval	n	n
TBB03	1292	1		Colourless	Stemmed drinking glass, base	free-blown	19th or E20th C	n	n
TBB03	1292	1		Colourless	Pharmaceutical phial, base	free-blown	19th or E20th C	n	n
TBB03	1292	1		Colourless	flask, neck and rim	free-blown	19th or E20th C	n	n

TBB03	1415	1		Natural green blue	Pharmaceutical phial, base	free-blown	17th or 18th C.	n	n
TBB03	1426	1		Colourless	Vessel	free-blown	Post-medieval	n	n
TBB03	1474	1		Colourless	Vessel	free-blown	Post-medieval	n	n
TBB03	1481	1		Olive green	English wine bottle, upper part	free-blown	L18th or E19th C.	n	n
TBB03	1481	1		Olive green	English wine bottle, base	free-blown	L18th or E19th C.	n	n
TBB03	1481	1		Olive green	English wine bottle, body frag	free-blown	Post-medieval	n	n
TBB03	1494	10		Olive green	English wine bottle, body frags	free-blown	L17th to 19th C.	n	n
TBB03	1498	1		Natural green	Bottle, cylindrical	machine-made	L19th or E20th C.	n	n
TBB03	1577	1		Colourless	Vessel	free-blown	Post-medieval	n	n
TBB03	1577	1		Natural green blue	Bottle, stopper	machine-made	L19th or E20th C.	n	n
TBB03	1697	3		Natural green	Window	cylinder blown	Post-medieval	n	n
TBB03	1697	1		Olive green	English wine bottle, body frag	free-blown	L17th to 19th C.	n	n
TBB03	1755	1		Olive green	English wine bottle, body frag, seal – double headed eagle and VPC	free-blown	L17th or 18th C.	y	y
TBB03	1796	1		Indeterminate colour	Waste, droplet		Post-medieval	n	n
TBB03	1796	1		Natural green	Window	cylinder blown	Post-medieval	n	n
TBB03	1796	1		Indeterminate colour	Beaker, rim	free-blown	Late medieval	y	y
TBB03	1796	1		Natural green	Window	cylinder blown	Post-medieval	n	n
TBB03	1823	1		Natural green	Window	cylinder blown	Post-medieval	n	n
TBB03	1835	1		Natural green	Vessel	free-blown	Post-medieval	n	n
TBB03	1835	1		Natural green with deep surface decomposition	Window	cylinder blown	Post-medieval	n	n
TBB03	1837	1		indeterminate	Waste, droplet		Post-medieval	n	n
TBB03	1838	1		Natural green	Window	cylinder blown	Post-medieval	n	n
TBB03	1839	1		Natural green	Window	cylinder blown	Post-medieval	n	n

TBB03	1852	1		Natural green blue	Vessel	free-blown	Post-medieval	n	n
TBB03	1859	1		Colourless/opaque white	Lattimo rod	drawn	L16th or 17th C.	y	y
TBB03	1859	1		Olive green	Small bottle, upper part, fire rounded rim	free-blown	17th or 18th C.	n	n
TBB03	1859	1		Natural green	Vessel	free-blown	Post-medieval	n	n
TBB03	unstrat	2		Natural green	Bottle, stoppers	machine-made	L19th or E20th C.	n	n
TBB03	unstrat	2		Natural green blue	Bottle, stoppers	machine-made	L19th or E20th C.	n	n
TBB03	unstrat	1		Colourless	Bottle, stopper	machine-made	L19th or E20th C.	n	n

Table 1: Objects of Glass

APPENDIX 10

METAL AND SMALL FINDS ASSESSMENT

Märit Gaimster (with stone identification by Kevin Hayward)

INTRODUCTION

Metal and small finds were retrieved from all areas of 169 Tower Bridge Road. The finds are listed in Table 1. The assemblage is dominated by finds relating to buildings and households in the post-medieval period, but includes also some that may date to the late medieval period, in the form of bone bead-making waste.

Besides a large number of iron nails, post-medieval household fixtures and fittings are reflected in iron pintles (TWG00 sf 50; TBB03 sf 12) and copper-alloy curtain rings (TWG00 sf 3, 28; TBB03 sf 1292). Remains of other furnishings are almost absent, with the exception of the fragment of a fine copper-alloy hinge mount (TWG00 sf 27), likely to come from a small box or casket. Household equipment is, however, well represented in numerous cutlery knives and handles. Three ivory-hafted knives (TWG00 sf 6, 40; TBA03 sf 1) may date from the late 17th or early 18th centuries (Thompson *et al.* 1984, 100-3), while a group of mainly scale-tang knives are likely to be from the 18th century (TWG00 sf 14, 39; TBA03 sf 6; TBB03 sf 7, 13). A complete silver knife with the blade engraved with a foliate design (TWG00 sf 32) dates from the late 19th century (cf. Brown 2001, 137 no. 121b).

Few dress accessories and personal belongings were retrieved, mostly in the form of copper-alloy dress pins (TWG00 sf 10; TBB03 sf 19, 27, 28). Unusual is the possible 19th-century chatelaine scent bottle (TWG00 sf 29). There is also a rectangular bone comb (TWG00 sf 19), of a form common in the 16th and 17th centuries (Margeson 1993, 66-68), and an incomplete iron spur (TBB03 sf 21). A handful of rectangular iron buckles are likely to be horse-harness buckles (TWG00 sf 42; TBB03 sf 23, 24)

A significant category of finds is represented by numerous pieces of waste in the form of thin bone panels with circular perforations (TWG00 sf 16, 45-49). This type of material is well known from late medieval and early modern finds, where it can be related to the manufacture of beads. Bone beads would have been produced mainly for rosaries, but bone beads were also used in the 15th and 16th centuries in elaborate dress trimmings and wirework jewellery (cf. Egan and Pritchard 1991, 305-17; Margeson 1993, 5 and Fig. 2 no.17). The finds from Tower Bridge Road also included two pieces of raw jet (TBA03 sf 8) and an oyster shell with a rectangular perforation (TBB03 sf 29). Such perforated shells have appeared on other sites together with late medieval bone bead-making waste, and it is possible that the shells were pierced to obtain mother-of-pearl (Gaimster and Yeomans *forthc.*). It is known that the artisans who made rosaries produced beads of a variety of materials, including coral, mother of pearl, amber and jet (Egan and Pritchard 1991, 305), so it is possible that the raw jet and the shell also relate to bead making on the site.

Other finds that may relate to production consist of a handful of stone hones for sharpening knives and other tools; a piece of lava quernstone is a residual find, either Roman or medieval (TWG00 sf 52) in

date. Besides four copper-alloy coins (TWG00 sf 2, 44; TBB03 sf 1, 8), all likely of an 18th-century date, there is also a possible 17th-century private farthing token (TWG00 sf 1) and a Nuremberg reckoning jeton (TBB03 sf 18). There is also a possible lead cloth seal (TBB03 sf 17).

RECOMMENDATIONS FOR FURTHER WORK:

The metal and small finds from Tower Bridge Road bring a significant contribution to the understanding of the site, and should be included in any further publication. The assemblage of knives bring valuable insights into the material culture of the early modern and post-medieval household; this category should be viewed together with other tableware and household equipment, such as pottery and glass. The bead-making waste indicates possible earlier activity on the site; this material needs to be analysed further and related to the increasing understanding of bead-making and bead products in the late medieval and early modern periods (cf. Spitzers 1997). In a broader sense, the assemblage of metal and small finds should be related to the phased history of the sites and its buildings and properties.

Supplementary work on a group of ironwork will requires further x-rays to be taken. The coins and jetton should be spot cleaned for further identification where appropriate, and cleaning and/or further identification is also recommended for the 19th-century silver knife. These recommendations are included in Table 1. Following additional quantification the large amount of mostly incomplete iron nails and undiagnostic iron fittings can be mostly discarded.

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TWG00				
context	sf	description	pot date	recommendations
12	44	copper-alloy coin; George III penny 1806		
19	32	complete silver ?fish or serving knife with hallmarked blade, engraved on one side with foliate design; integral hollow-cast tapering handle with , tapering with terminal knop; sunburst design at both ends; late 19th c		x-ray and clean
33	27	fine copper-alloy hinge mount; incomplete; hinge ht 4mm; ?from small casket/box		
52		iron nail; L 60mm		
74		iron nail; L 80mm		
78		iron nails; L 35 and 65mm		

79		iron nails; L 70 and 85mm		
85	50	iron pintle; complete; rectangular-section spike L 115mm		
86		iron nail; L 35mm		
229	20	iron strap fitting; incomplete; W 28mm		
	21	iron strap fitting; two pieces; W c.25mm		
		large iron spike; L 370mm		
231	28	copper-alloy curtain ring; diam.25mm		
232	3	copper-alloy curtain rings; two; diam. 27mm		
	29	copper-alloy oval-link chain; three lengths now corroded into lumps; flattened copper-alloy bottle or receptacle; W 33mm; ?19th-c chatelaine scent bottle		
	34	iron bar/fitting; incomplete; rectangular section 10x15mm		
		iron nail; incomplete, and two iron bars/fittings; rectangular section; L 145 and 250mm		
249		iron nail; L 75mm		
253	2	copper-alloy coin; George III halfpenny ?1799		
264	23	iron nail; incomplete		
		iron nail; L 80mm		
295	24	iron tool or implement; rectangular-section bar widening out to flat triangular end; L 240mm; ?crowbar		
	31	iron strap fitting; incomplete; W c.25mm		
297	1	copper-alloy coin; ?17th-c farthing token		clean
299	22	U-shaped iron strap fitting; L 190mm W 55mm		
302		iron nail; L 140mm+		
309	25	iron strap; incomplete		
312		iron nail; L 50mm		
340	6	ivory whittle-tang handle; tapering with flat end; L 78mm		
356	26	iron ?bolt; incomplete		
		iron nail; incomplete; from sample <5>		
361	4	gun flint; two pieces		
	7	iron nail; L 55mm		
	51	flat-oval section hone stone; incomplete; Kentish ragstone		
	52	piece of lava quernstone; ?residual Roman		
363		iron nails; two; L 60 and 135mm		
369		iron nails; three; L 60, 75 and 95mm		
370	35	iron strap fitting; incomplete; slightly tapering; W. c.23mm; ?door strap hinge		
	36	iron ?u-shaped strap fitting; incomplete; W of strap 13mm		
371	40	ivory handle; tapering with bulbous end; L 68mm; late 17th/early 18th c		
		iron nail; incomplete; from sample <6>		
388	45	bone bead-making waste; one piece; from sample <15>		
		iron nails; two; incomplete		
		iron nails; two; L 50 and 60mm; from sample <15>		
		short length of iron pipe; L 140mm; two iron nails; L 65 and 115mm		
402		iron nail; L 50mm		
405		iron nail; L 60mm		
407		iron nail; L 80mm		
426	37	iron bolts; two; conical heads; L 65mm diam.20mm		
433	47	bone bead-making waste; one piece; from sample <8>		
435	9	stone marble		
		iron nails; two; incomplete		
450		iron nails; six incomplete; two with flat-oval section		
454		iron nail; incomplete		
456	38	?cast iron plate; 50x110mm+		
	39	iron scale-tang knife with short cylindrical bolster; incomplete; two rivet holes extant for scales; blade with parallel straight back and edge; W 18mm L 90mm+; ?18th century or possibly late medieval		

457	10	copper-alloy pin; complete; very fine with wound-wire head; L 22mm		
		iron nail; L 55mm		
462	41	oval-section stone hone; incomplete; Kentish ragstone		
	46	bone bead-making waste; two pieces; from sample <11>		
		iron nails; three incomplete; from sample <11>		
463	48	bone bead-making waste; three pieces; from sample <9>		
464	12	iron ?knife blade; two pieces; W 12mm		
	49	bone bead-making waste; five pieces; from sample <10>		
		iron nails; two incomplete; from sample <10>		
471		iron nail; L 60mm		
478	13	iron single-barbed fishhook; L 115mm		
	14	iron whittle-tang knife with short cylindrical bolster; incomplete		
		iron nails; two incomplete; from sample <13>		
485		iron nails; three incomplete; from sample <12>		
499	15	iron strap mount; fragment only; W 15mm		
512	16	bone bead-making waste; one piece with one bead still present; from sample <16>		
520	42	iron buckle; oval-rectangular; W 35mm L 40mm		
536	43	iron horseshoe; incomplete		
538		iron nail; L 60mm		
571	19	rectangular one-piece bone comb; double-sided with fine-set teeth on both sides; 50x70mm		
584		iron nail; incomplete		
TBA03				
context	sf	description	pot date	recommendations
750		iron nails/structural fittings		
		large iron structural fitting; ?wall/timber fixing plate; plate c.80x150mm rod/shaft L 200mm		x-ray
869	3	iron nail; incomplete		
921	4	iron nail; L 60mm		
924	5	flat iron ring/fitting; diam.60mm		
985		iron nails; two; rectangular section L 105mm; flat rectangular section L 130mm		
987	1	small ?special-purpose whittle-tang knife with ivory handle; complete but bent; blade with straight edge and back curving down to the tip; straight handle with bulbous end; handle L 80mm; blade L 65mm; late 17th/early 18th c		
990		iron nail; flat rectangular section; L 85mm		
991	7	oval-section stone hone; incomplete; Kentish ragstone		
996		iron nails; two; L 65 and 110mm		
1000	6	iron scale-tang knife with bone handle; incomplete; two iron rivets extant		
1013		iron nail; incomplete		
1025	8	two pieces of raw jet		
1031		iron nail; L 68mm		
1082		iron nail; incomplete		
1102		iron nails, from sample <10>		
TBB03				
context	sf	description	pot date	recommendations
1184		iron nail; incomplete		
1190	3	iron ?nail		x-ray
1213	6	iron ?structural fitting; cast rectangular plate 60x100mm		x-ray
1217		iron nail; incomplete		
1263		lead waste		
1287	4	iron ?nails		x-ray
1292	1	copper-alloy coin; heavily corroded; ?18th-c halfpenny		x-ray
	2	copper-alloy ?curtain ring; diam.27mm		x-ray
	7	scale-tang iron knife with ivory pistol-grip handle; handle complete L 80mm; three iron rivets extant; 18th c		x-ray
1474		iron nail; incomplete; from sample <1>		
1506	5	iron ?nails		x-ray

1691	13	?ivory scale-tang handle; flat d-shaped section with slightly rounded end; L 85mm		
1699		iron ?nails		x-ray
1721		iron nail; incomplete		
1723	14	iron ?hook; rectangular section; L c.150mm		x-ray
1744	25	copper-alloy nail; L 45mm; large flat head diam. 23mm		
		iron nail; incomplete		
1750	8	copper-alloy coin; heavily corroded; ?18th-c halfpenny		x-ray
1754		iron nails; three; incomplete		
1755	11	copper-alloy tack; L 8mm		
		iron nail; incomplete		
		iron ?nails		x-ray
1756	12	iron ?pintle		x-ray
1760		iron nail; incomplete		
1768		iron nails		
1780		iron nail; incomplete		
1796	10	stone hone; incomplete; greensand		
		lead waste		
		iron nails; numerous; incomplete		
1805		iron object		x-ray
1820		iron ?nail		x-ray
		iron ?strap; from sample <55>		x-ray
1823		iron nail; flat rectangular section; L 105mm		
1825	18	copper-alloy jeton; Nuremberg; incomplete		x-ray/clean
	19	copper-alloy pin; wound-wire head; L 29mm		
		iron nails; three; incomplete		
		iron nails; three; incomplete; from sample <62>		
1829		iron ?nail		x-ray
1830	23	rectangular iron ?harness buckle; c.35x40mm		x-ray
	24	rectangular iron ?harness buckle; incomplete		x-ray
	29	perforated oyster shell; rectangular perforation 10x20mm; ?shell-working waste		
1834		iron ?nail		x-ray
1835		iron nails; two; incomplete; from sample <54>		
1836	15	copper-alloy object; three pieces		x-ray
		iron nails; two; incomplete		
1837	17	lead ?cloth seal		further identification
	26	copper-alloy straps; two; W 5mm		x-ray
		iron nails; four; incomplete		
		iron nail; L 70mm; from sample <51>		
		iron ?buckle; from sample <51>		x-ray
1838	27	copper-alloy pins; two very fine; one complete L 32mm		
		iron nails; two; L 40 and 55mm		
		iron nail; numerous; incomplete; from sample <52>		
1839		iron nails; three; incomplete		
1842		iron nail		
1854	28	copper-alloy pin; incomplete		
1859		iron nails; two; incomplete		
		iron objects; two rectangular 20x70mm		x-ray
1860		iron nail; incomplete		
1867		iron nail; incomplete; from sample <61>		
1874		iron nail; incomplete; from sample <59>		
1877		iron nail; incomplete; from sample <60>		
1903		iron nail; incomplete		
1919		iron nails; four; incomplete; from sample <66>		
1922	30	stone hone; complete; greensand		
		iron strap/binding		x-ray
		iron nails; two; incomplete		
1923		iron nail; incomplete		
1924	21	iron rowel spur; flat curved sides; downward-curved neck		
1925	31	probable hone fragment; chlorite mica schist		

Table 1: Metal and Small Finds

APPENDIX 11

ASSESSMENT OF THE IRON SLAG AND OTHER HIGH TEMPERATURE DEBRIS

Lynne Keys

INTRODUCTION AND METHODOLOGY

A small assemblage weighing just over 8.6kgs, recovered by hand and from samples taken on site, was examined by eye and categorised on the basis of morphology alone. Each slag or other material type in each context was weighed; smithing hearth bottoms were individually weighed and measured to obtain statistical information. Quantification data are given in the table below in which weight (wt.) is shown in grams; length (len.), breadth (br.) and depth (dep.) in millimetres.

site	cxt	169 Tower Bridge Road				(site code: various)		
		<>	slag identification	wt.	len	br	dep.	comments
TBA 03	879		smithing hearth bottom	484	160	130	40	
TBA 03	880		smithing hearth bottom	1227	170	130	70	
TBA 03	1044	5	cinder	1013				
TBA 03	1044	5	undiagnostic	177				
TBB 03	1472		burnt coal	4				
TBB 03	1472		smithing hearth bottom	225	110	75	45	broken
TBB 03	1472		undiagnostic	172				probably smithing slag
TBB 03	1650		burnt coal	645				slagged
TBB 03	1692	50	burnt coal	1				
TBB 03	1699		undiagnostic	586				perhaps misshapen smithing hearth bottom
TBB 03	1725		burnt coal	6				
TBB 03	1725		iron	50				
TBB 03	1744		undiagnostic	808				poss. pieces of three smithing hearth bottoms
TBB 03	1755		burnt coal	2				
TBB 03	1796		burnt coal	18				
TBB 03	1796		mixed small pieces	181				burnt coal, coal, charcoal, fuel ash slag, undiagnostic
TBB 03	1796		undiagnostic	352				
TBB 03	1823	55	burnt coal	29				
TBB 03	1829		fuel ash slag	66				
TBB 03	1830	53	burnt coal	2				
TBB 03	1830		cinder	56				glassed surface
TBB 03	1835	54	coal	43				laminated; including burnt
TBB 03	1835	54	undiagnostic	76				
TBB 03	1836	16	burnt coal	273				laminated; slagged
TBB 03	1838		cinder	37				
TBB 03	1838		undiagnostic	6				
TBB 03	1864	58	burnt coal	3				
TBB 03	1922		burnt coal	14				83/206 spit 1
TWG 00	85		vitrified hearth lining	25				
TWG 00	299		fuel ash slag	170				
TWG 00	299		slag runs	38				long runs

TWG 00	299	smithing hearth bottom	3002	230	190	60	
TWG 00	299	undiagnostic	339				contains laminate type coal
TWG 00	311	3 burnt coal	12				
TWG 00	312	smithing hearth bottom	331	110	80	45	
TWG 00	312	undiagnostic	90				
TWG 00	328	cinder	10				
TWG 00	328	smithing hearth bottom	441	90	90	50	
TWG 00	328	smithing hearth bottom	424	110	85	60	
TWG 00	328	undiagnostic	411				
TWG 00	328	vitrified hearth lining	48				
TWG 00	340	4 burnt coal	56				
TWG 00	340	4 coal	98				some slagged
TWG 00	340	4 fired brick?	209				
TWG 00	340	4 fuel ash slag	453				
TWG 00	340	4 mortar	15				
TWG 00	340	4 slag dribbles	8				
TWG 00	340	4 vitrified hearth lining	317				
TWG 00	340	furnace lining	1230				
TWG 00	340	undiagnostic	40				
TWG 00	356	5 undiagnostic	49				
TWG 00	361	2 burnt coal	52				
TWG 00	361	2 ferruginous concretion	40				
TWG 00	361	2 undiagnostic	19				
TWG 00	361	burnt coal	2				
TWG 00	361	iron nail?	6				
TWG 00	363	coal	19				slagged; laminate type
TWG 00	371	6 burnt coal	14				
TWG 00	374	7 burnt coal	16				
TWG 00	388	15 burnt coal	1				
TWG 00	388	15 coal	15				cuboid
TWG 00	433	8 burnt coal	33				
TWG 00	433	8 coal	123				laminated type
TWG 00	433	undiagnostic	254				
TWG 00	435	smithing hearth bottom	215	100	70	35	
TWG 00	435	undiagnostic	1303				part of smithing hearth bottom?
TWG 00	462	11 burnt coal	9				
TWG 00	464	10 coal	6				slagged
TWG 00	485	12 burnt coal	2				
TWG 00	485	12 fired clay	11				
TWG 00	512	undiagnostic	132				

total wt. = 8660g

Table 1: Slag quantification

EXPLANATION OF TERMS

Smithing is hot working, using a hammer, of one or more pieces of iron to create or repair an object. As well as bulk slags, including the smithing hearth bottom, this generates micro-slags: hammerscale flakes from ordinary hot working of a piece of iron or tiny spheres from high temperature welding to join two pieces of iron. The slag type described as 'smithing hearth bottom' is a plano-convex shaped slag formed as a result of high temperature reactions between the iron, iron-scale and silica from either a clay furnace lining or the silica flux used by the smith. The iron silicate material from this reaction slag dripped down into the hearth base forming slag which, if not cleared out, developed into the smithing hearth bottom. Before it could grow large enough to block the tuyere hole (where the air from a bellows entered the hearth) the smithing hearth bottom was removed and dumped in the nearest pit, ditch or unused area.

Some slag may be described as undiagnostic because it has been broken up during deposition, re-deposition or excavation. Other types of debris in the slag assemblage may be the result of a variety of high temperature activities - including domestic fires - and cannot be taken on their own to indicate iron-working was taking place. These include fired clay, vitrified hearth lining, cinder, and fuel ash slags. However if found in association with iron slag they may be products of the process.

DISCUSSION OF THE ASSEMBLAGE

The diagnostic iron slag indicates smithing activity but much of it appears to represent dumped or re-deposited material rather than in-situ iron working deposits. The quantity of coal (burnt, unburnt and slagged) among the assemblage is significant. Generally it was a laminated type which appears in London assemblages towards the late medieval period and continues to be used in the post-medieval period. It does not necessarily represent iron working or other industrial activity except in cases where it is slagged.

Phase 8 (TBB 03)

The only material was a small amount of burnt coal.

Phase 9 (TBB03 & TWG 00)

Again the material was a small amount of undiagnostic slag and burnt or slagged coal. All came from ditches.

Phase 10 (TBB03 & TWG 00)

Burnt coal and some undiagnostic slag were found in dumping or levelling deposits.

Phase 11 (TBA 03, TBB 03 & TWG 00)

Again, most of the material is coal with small amounts of undiagnostic slag and some non-ironworking debris. All was dumping, levelling, or backfill in pits or slots.

Phase 12 (TBB 03 & TWG 00)

In this phase iron slag is more prevalent than earlier phases and the first smithing hearth bottoms (five in all) are found. TWG 00 produced the largest amount of material, mainly from tanning pits [329], [314], [417], [1666] and well [1677]. The material from TBB03 was from tanning pit [1474].

Phase 13 (TBB 03)

This phase was represented by a tiny amount of burnt coal from cesspit [1695].

Phase 14 (TBA 03, TBB 03 & TWG 00)

This was the only phase where iron working activity rather than re-deposited material could be identified. In TWG 00, layer [299] was industrial waste containing a smithing hearth, undiagnostic slag, slag runs and fuel ash slag. The smithing hearth bottom was extremely heavy although its size was not beyond the range for post-medieval smithing. Unfortunately, no hammerscale was present but it is hoped some will be recovered from soil samples taken during excavation. The material from the other two sites in this phase echoes the re-deposition pattern of earlier phases in that the two smithing hearth bottoms were found in well [876] and some slagged coal in cesspit [1652]

RECOMMENDATIONS FOR FURTHER WORK

Any samples with hammerscale – particularly if from the iron working area in TWG 00, phase 14 – need to be examined.

If a focus of smithing relating to TWG 00 (phase 14) is located during post-excavation analysis, further work might be required to integrate and interpret the slag for publication.

At the present time no further work is recommended on the rest of the assemblage.

STORAGE AND DISPOSAL

The iron slag, being fayalitic, requires no special storage conditions. After any material from soil samples has been examined the assemblage could be discarded.

APPENDIX 12

ASSESSMENT OF THE ANIMAL BONE

Kevin Rielly

INTRODUCTION

This study deals with the results of 4 sites excavated in an area of Southwark, bounded by Tanner Street to the south and Roper Lane/Tower Bridge Road to the east. The three main sites in this study, all addressed as 169 Tower Bridge Road, going from north to south, include the two phases of TBB03 i.e. the Gatehouse and Building 6, followed by Building 5 (TBA03) and Building 1 (TWG00). Each of these sites provided large animal bone assemblages, largely contained within a concentration of post-medieval industrial deposits. The fourth site, at Building 2, 169 Tower Bridge Road (TBI01) was situated just to the west of the Building 1 incursion. This provided a very limited animal bone assemblage and has been excluded from this investigation.

It is well known that this general area contained numerous establishments involved in the leather industry, as proven by the historical evidence (see Yeomans 2004) as well as by previous archaeological incursions. Tawyers waste assemblages, characterised by concentrations of sheep/goat foot bones have been found in 17th/18th century levels at Vinegar Yard, 33 Tanner Street (Heard 2000), while concentrations of cattle horncores, suggestive of tanning/hornworking waste have been found within similarly dated contexts at 211 Long Lane (McKinley 2006, 91). Such industries were in evidence in this immediate locality from the 17th through to the early 19th century, their demise marked by the construction of the Vinegar Works in 1814.

The main sites also produced evidence of occupation activity prior to the 16th/17th century development of this area. Small collections of bones were taken from prehistoric, Roman and medieval features/layers, generally related to alluvial deposits marking periodic floodings of the Horsleydown Eyot (on which these sites were located) and efforts made to control the drainage of this area (various cut features).

METHODOLOGY

The bone was recorded to species/taxonomic category where possible and to size class in the case of unidentifiable bones such as ribs, fragments of longbone shaft and the majority of vertebra fragments. Recording follows the established techniques whereby details of the element, species, bone portion, state of fusion, wear of the dentition, anatomical measurements and taphonomic including natural and anthropogenic modifications to the bone were registered.

DESCRIPTION OF FAUNAL ASSEMBLAGE BY PHASE

All of the bones from these sites were well preserved and while the degree of fragmentation varies considerably between certain areas, these differences can be related to human agency (see below,

Phase 11) rather than any mechanical damage related to post-depositional factors. Table 1 shows the hand collected total fragment counts from each excavation area divided by phase. Notably the vast majority of the bones were recovered from the post-medieval levels and in particular from the most northerly of the excavation areas, namely the TBB03 Gatehouse excavation. A large proportion of the bones from this area were taken from dumps incorporating a dense mass of highly fragmented cattle bones. Three particularly large assemblages, from [1796], [1830] and [1837] were sub-sampled prior to processing, with approximately 10% retained and the remainder discarded. The very similar nature of these collections allowed a reduction to take place without any appreciable loss in potential data. However, to minimize any potential loss, the remaining 90% was quickly scanned for any unusual species/bones, while those that could offer metrical data (generally limb bone pieces with intact articular ends) were separated and kept (this was undertaken by Lisa Yeomans). Note that the figures given below and throughout the text do not include these 'kept' bones. It can be mentioned that these bones did not provide any additional species.

Phase	Gen date	Site			
		TBA03(B5)	TBB03(B6)	TBB03(G)	TWG00(B1)
3	Prehistoric			3	9
4	Prehistoric	21			
6	Prehistoric				11
7	Roman	33	4		
8	Post-Roman		6	3	
9	LM/EPM	102	34	126	202
10	PM	6		44	79
11	PM	432	792	6944	264
12	PM	23	261	427	576
13	PM	213		20	6
14	PM	18		102	5
15	L19-20			1	10
Total		794	1053	7667	1142

Table 1: Distribution of hand collected bones by site and phase, where LM is late medieval, EPM early post-medieval, PM is post-medieval and L19-20 is late 19th to 20th centuries. Sites:- TBA03 (Building 5), TBB03 (Building 6 and the Gatehouse), TWG00 (Building 1).

A small number of contexts from all three sites were environmentally sampled, these being washed through a 1mm mesh using a modified Siraf tank. Following the concentration of deposits amongst the later phases, the majority of samples were taken from post-medieval levels.

Prehistoric (Phases 3, 4 and 6)

The Phase 3 bones were found in two waterlain/natural features at the Gatehouse (TBB03) excavation and also from a possible ploughsoil and a well fill within the Building 1 (TWG00) excavation area.

These small assemblages (see Table 2 and 3) are composed of cattle and sheep bones accompanied by cattle- and sheep-sized long bone and indeterminate pieces. A slightly larger collection was taken from two fills within the Period 4 ditch [1079] in the Building 5 area (TBA03). This produced 8 cattle bones, representing at least 2 adult individuals, plus a single horse and sheep fragment. Finally, a single cattle bone and 8 sheep/goat fragments were recovered from two phase 6 alluvial deposits taken from the Building 1 area. Sheep/goat is represented exclusively by metapodials (foot bones, all from [86]), which may be indicative of prehistoric craft or butchers activities. However, considering the wealth of such material from overlying levels, it can be supposed that either the bones are redeposited or that the phasing for this particular deposit is wrong. Notably, the stratigraphy report does mention the possibility that these levels may actually date to the latest alluvial sequence (Phase 8), prior to late medieval attempts to drain this area (Phase 9).

It is difficult to assign a date purely on the animal bone evidence, especially when the quantities are rather small and also when similarly sized domesticates were present in Britain throughout the late prehistoric through to later post-medieval era. Both the cattle and sheep represented in these levels are comparable in size to well dated Roman and later examples from London sites.

	Phase					
Species/Animal size class	3	4	6	7	8	9
Cattle (<i>Bos taurus</i>)	3	8	1	2	2	71
Horse (<i>Equus caballus</i>)		1		1	1	7
Cattle-size	4	11	1	22		104
Sheep/Goat (<i>Ovis aries</i> / <i>Capra hircus</i>)	1		5	1	4	101
Sheep (<i>Ovis aries</i>)	1	1	3	3	2	136
Goat (<i>Capra hircus</i>)				1		1
Pig (<i>Sus scrofa</i>)				1		11
Sheep-size	3		1	6		34
Cat (<i>Felis domesticus</i>)						1
Hare (<i>Lepus</i> sp)						1
Small mammal						2
Chicken (<i>Gallus gallus</i>)						2
Chicken-size						1
Goose (<i>Anser anser</i>)						1
Swan (<i>Cygnus</i> sp)						1
Crane (<i>Grus grus</i>)						1
Grand Total	12	21	11	37	9	475

Table 2: Counts of hand collected animal bones in phases 3 to 9.

	Phase					
Species/Animal size class	3	9	10	11	12	15
Cattle (<i>Bos taurus</i>)		4	1	318	3	
Horse (<i>Equus caballus</i>)		2			3	
Cattle-size		10		3899	165	

Sheep/Goat (<i>Ovis aries</i> / <i>Capra hircus</i>)	1	52	10	115	29	2
Sheep (<i>Ovis aries</i>)		2	2	8		
Pig (<i>Sus scrofa</i>)			1	39		1
Sheep-size		72	17	143	866	
Dog (<i>Canis familiaris</i>)				1	2	
Cat (<i>Felis domesticus</i>)				1		
Rabbit (<i>Oryctolagus cuniculus</i>)		1		1		
Small mammal				3	1	
Chicken (<i>Gallus gallus</i>)		2				
Goose (<i>Anser anser</i>)						
Mallard (<i>Anas platyrhynchos</i>)		1				
Cod family (<i>Gadidae</i>)		2				
Herring/sprat (<i>Clupeidae</i>)		1				
Unidentified fish		2				
Amphibian		4			1	
Grand Total	1	155	31	4528	1070	3

Table 3. Counts of sieved animal bones from each occupation phase

Roman (Phase 7)

A moderate number of bones were recovered from Building 5 deposits, including an alluvial layer and fills of a drainage ditch, while a few bones were derived from a ditch fill within the Building 6 area. Most of the Building 5 bones were cattle-size vertebrae and rib fragments, which could conceivably represent the partial remains of a single individual. The sheep/goat, sheep and goat elements were taken from the alluvial layer [1083] and as they are all foot bones, it follows that they may have been redeposited from some later level (see above, describing a similar assemblage from a phase 6 alluvial deposit). The Building 6 bones are composed of two cattle limb bone fragments and a horse tooth, all from adult individuals.

Post-Roman alluviation (Phase 8)

This assemblage was confined to two alluvial deposits from the Building 6 area. Cattle and horse are represented by teeth from rather old adults, and sheep/goat by 4 metapodials, a phalange and a single radius. While the sheep bones may be redeposited (assuming they represent industrial/craft waste) from an upper level, it is possible that this phase (or at least certain contexts within it) may actually just predate the late medieval horizons and could therefore represent waste from the beginnings of leather working activities in this part of Southwark.

Late medieval/early post-medieval (Phase 9)

A major attempt to drain this part of Bermondsey during this era is shown by the concentration of drainage ditches. These provided all but a very few of the bones dated to this phase, with the majority of bones generally arising from those areas with the most ditches, essentially Buildings 1 and 5, although a large proportion was also revealed by the ditches in the Gatehouse area. There are notable similarities in the bone assemblages from all five areas in that sheep/goat fragments dominate each

collection (with one less than significant exception, see below) and that the great majority of these collections are composed of foot bones (metapodials and phalanges). This abundance of sheep foot bones can be interpreted as waste from local tanners' activity dating to this phase, or perhaps represent redeposited waste from the clearly attested leather working activities occurring in this immediate area from the late 17th century onwards (McKinley 2002, 91). In the Gatehouse area sheep/goat provided 52 in comparison to 26 cattle fragments, the former total comprising 36 metapodials and 5 phalanges. The lack of phalanges may relate to recovery, as shown by the good proportion of phalanges from the sieved contents of 2 ditch fills (2 metapodials and 6 phalanges out of 14 fragments).

The animal bones from the Building 6 excavation area were mainly recovered from pit [1470] and the small collection from this feature (32 bones) provided just one sheep/goat compared to 12 cattle fragments. These cattle bones, in common with those retrieved from the adjacent Gatehouse excavation, have all been extensively butchered, including chopping articular ends into sections and splitting bones in both the anterior-posterior and lateral-medial planes. Such butchery is beyond that generally required for joint and/or 'soup' bone production and is reminiscent of the type of butchery seen on the large concentrations of cattle bones derived, in particular, from later levels within these two excavation areas, these interpreted as 'oil extraction' waste.

Both areas also provided a few pig bones, while horse, rabbit, chicken, goose, herring/sprat and gadid (cod family) were recovered amongst the Gatehouse drainage fills. One of the horse bones, a radius from a Gatehouse ditch fill [1919] had been butchered, with a jointing cut to the distal end and defleshing marks to the shaft. This would certainly suggest the use of horseflesh, although it cannot be said if this was for human or animal consumption (see Phase 11).

The drainage ditch fills from Building 5 provided another sheep/goat-rich assemblage, with 56 bones compared to just 9 cattle, 1 pig and 4 horse bones (out of a total of 102 fragments). Most of the sheep/goat bones were taken from two ditches, [1014] (fill [1011]) with 42 out of 54 bones and [1050] (fill [1051]) with 12 out of 16 bones. In each case, there is a wealth of foot bones, the former providing 37 fragments, comprising 28 metapodials and 9 phalanges, while the 12 from [1050] are all metapodials. The latter collection was complimented by a further concentration of foot bones arising from a sample taken from another fill [1049] in ditch [1050], composed of 2 metapodials, 18 phalanges and 14 sesamoids. Unlike the Building 6 and Gatehouse cattle bones, there appears to be very little butchery, perhaps suggesting a somewhat localised 'oil extraction' industry (and see later).

The most southerly area, Building 1, produced the largest collection dated to this phase, a total of 216 fragments. The bones were recovered from a series of ditch fills, mainly arising from the major north-south drainage structure [400]/[486] and its attendant 'feeder' ditches. Sheep/goat is best represented amongst the identifiable portion of the assemblage (127 compared to 24 cattle fragments) and the great majority of these are foot bones (94 metapodials and 10 phalanges). Again, the cattle bones show no unusual level of butchery. In addition, the Building 1 ditch fills provided one bone each of horse, cat, hare, swan and crane, the last four representing the sole examples of these species in this

phase. Both swan and crane can be regarded as high status comestibles, suggesting the presence of waste from an affluent household or perhaps an eatery or gentlemen's club.

Species/Animal size class	Phase					
	10	11	12	13	14	15
Cattle (<i>Bos taurus</i>)	17	1292	426	63	37	2
Horse (<i>Equus caballus</i>)	8	83	59	6	3	
Cattle-size	20	5804	464	66	39	3
Red deer (<i>Cervus elephas</i>)			1	1	1	
Red deer/Fallow deer (<i>Cervus elephas/Dama dama</i>)			1	2		
Fallow deer (<i>Dama dama</i>)				1		
Sheep/Goat (<i>Ovis aries/Capra hircus</i>)	17	354	97	32	13	1
Sheep (<i>Ovis aries</i>)	35	362	118	23	5	1
Goat (<i>Capra hircus</i>)		15	5		1	
Pig (<i>Sus scrofa</i>)	2	82	21	5	3	1
Sheep-size	10	387	50	21	5	2
Dog (<i>Canis familiaris</i>)	2	29	23	14	17	
Cat (<i>Felis domesticus</i>)		6	3		1	
Hare (<i>Lepus sp</i>)		2				
Small mammal		5	9			
Chicken (<i>Gallus gallus</i>)	1	5	1	1		
Goose (<i>Anser anser</i>)			2			
Unidentified bird		1				
Grand Total	112	8427	1280	235	125	10

Table 4: Counts of hand collected animal bones in phases 10 to 15

Post-medieval consolidation (Phase 10)

This is the least well represented of the later phases, with just moderate quantities from the Gatehouse area (44 fragments) and Building 1 (64 fragments), and a few from Building 5 (6 fragments). This phase is marked by the infilling of the various drainage features dated to phase 9 and by the beginnings of some structural activity. The Building 1 area assemblage was taken entirely from infilled ditches, while various structural features provided the bones from the other two areas. There is a similarity with the Phase 9 collections regarding both the better representation of sheep/goat relative to cattle and the abundance of sheep/goat foot bones. This is clearly shown even by the smallest collection, from Building 5, the 6 identifiable bones comprising 1 chicken and 5 sheep/goat bones, of which 4 are metapodials. In the larger assemblages from the Gatehouse and Building 1 areas, metapodials account for 14 out of 18 and 24 out of 29 sheep/goat bones respectively. In addition, the Building 1 assemblage featured 3 sheep horncores, as well as another horncore and 5 foot bones amongst the 9 sheep/goat bones provided by the single phase 10 sample taken from these sites. The presence of horncores, in sufficient concentration, can also be linked with leather working activities.

The few cattle bones from the Gatehouse area were heavily butchered, again suggestive of 'oil extraction' rather than domestic/butchers waste. Notably, one of the Building 1 cattle bones, a first

phalange, had been split. This was very commonly seen amongst the Gatehouse and Building 6 'oil extraction' waste deposits (see below) and may therefore suggest deposition of such waste did take place in other areas. Most of the Building 1 bones were taken from general dump [462], this also providing 8 horse and 2 dog bones, the former representing the partial remains of at least two adult individuals.

Post-medieval industry 1 (Phase 11)

This phase provided a wealth of structural features undoubtedly related to the leather works based in this area from at least the 17th century. These include single tanning pits as well as composite structures composed of a series of wooden tanks placed within a large cut feature. The culmination of this phase is shown by a series of dumping horizons, these were present in all four sites, sealing the underlying tanning structures.

The greater proportion of the bones from this phase (see table 4) was recovered from the two northernmost sites, the Gatehouse and Building 6, with 6,943 and 792 fragments respectively. Both featured substantial assemblages from the various structural fills as well as from the overlying dumps. At the Gatehouse, the former collection (325 fragments) was largely derived from two possible beamslots [1880] and [1872], these situated in the western part of the site. The sealing deposits provided a very large concentration of highly fragmented cattle and cattle-size bones (Tables 5 and 6 and see below), mainly derived from [1796], [1830] and [1837]. It was decided, due to the general similarity of the assemblages from these major deposits to keep and record just 10% of the bones (see introduction to this section). Thus, while the total number of recorded bones from the Gatehouse dumps amounts to 6,618 pieces, with 4,644 from these three deposits, it can be estimated that the actual number of bones present in these dumps would have been approximately 48,500 pieces. The structural assemblage from the adjacent Building 6 excavation is composed of 305 fragments, mainly taken from the fills of two tanning pits, [1533] (56 bones) and [1481] (160 bones), the second representing the basal fill of a large timber-lined structure some 7 metres long north to south. The sealing dumps provided a somewhat less concentrated collection compared to the Gatehouse, with 487 fragments, the majority arising from dump [1151] (460 bones) situated in the southwestern part of the trench. Both the Building 5 and Building 1 excavations provided more bones from the structural elements compared to the overlying dumps. This is particularly the case with Building 5, with just 42 fragments from the dumps and 390 from the underlying features. Most of the latter total was taken from pit fill [1000] (316 bones) of wattle-lined pit [1002]. In Building 1, there were 113 bones taken from one dump deposit [370] and 138 from the layers below, mainly from fills [361] (51 bones) and [393] (27 bones) of pit [394].

Site	F/D	Cattle bones	Head and foot	%	Cut bones	%
		N	N		N	
Gatehouse	F	101	9	8.9	75	74.2
	D	933	70	7.5	742	79.5
Building 6	F	106	9	8.5	61	57.5
	D	19	1	5.2	13	68.4

Table 5: Proportion of phase 11 cattle skeletal extremities and butchered bones where F equals underlying fills and D equals the overlying dumps, and N is total fragment count (hand collected bones only)

The identifiable portion of the bone assemblages from these various sites and features are almost entirely composed of cattle and sheep bones. There is also a large proportion of cattle-size bones, which, considering the alternatives, are far more likely to belong to cattle than any other species. The cattle/cattle-size bones, as mentioned above, were particularly well fragmented from the Gatehouse dumps. Very similar, though less concentrated, collections were taken from the underlying levels and also from the majority of deposits in the Building 6 area. Apart from the obvious fragmentation, these assemblages were almost entirely composed of dressed carcass skeletal elements i.e. without head and foot parts (metapodials and phalanges) and a great majority of both the cattle and cattle-size bones had been chopped (see Table 5). A particular feature of the butchery was the excessive splitting of longbones, with a large proportion of articular end fragments split in the latero-medial as well as the anterior-posterior plane (often twice). As mentioned, phalanges tended to be underrepresented, although they did form 56 out of the 70 head and foot bones recovered from dump deposits at the Gatehouse. Notably, almost all of the phalanges from these deposits had been split and split again. The great majority of the cattle-size bones were either longbone or indeterminate fragments, almost certainly representing various limb bones, and a large proportion of these had been heavily butchered (see Table 6). Such excessive and deliberate fragmentation is clearly indicative of waste derived from some industrial process involved in oil/fat production. Obviously the most useful skeletal parts would be those with some marrow content, which could explain the dearth of skulls and mandibles. A particular fine oil, known as 'neatsfoot' oil was available from the foot bones and the splitting of the phalanges may be indicative of how this oil was extracted. It can perhaps be assumed that the metapodials were less useful in this respect. However, it is always possible that these bones were not included in the oil extraction process due to their importance in the boneworking industry (see Conclusions).

Site	F/D	Cattle-size bones	Cut bones	%
		N	N	
Gatehouse	F	154	39	25.3
	D	5290	1702	32.1
Building 6	F	131	40	30.5
	D	11	7	63.6

Table 6: Proportion of phase 11 cattle-size bones with butchery marks where F equals underlying fills and D equals the overlying dumps, and N is total fragment count (hand collected bones only)

In sharp contrast, the cattle component of the Building 5 and Building 1 assemblages is less fragmented and less numerous (in comparison to sheep/goat) and provided very few butchered bones (see Table 7). In addition, there is a greater proportion of head and foot bones. The cattle butchery is sufficiently similar to suggest that some oil extraction waste is present at both sites, but the greater mixture of skeletal parts is clearly indicative of waste from other sources. The greater representation of cattle horncores is of interest, with a particular concentration comprising 6 relatively complete cores (and no other bones) discovered within a barrel set into pit [1024] in the Building 5 area. This could represent hornworking waste, although considering the clear evidence for leather working activities (tanning pits and the concentrations of sheep metapodials, see below), they are more likely to represent waste from the local tanning works. These could be the remains of horns dumped at this site rather than sent on to the hornworker, following a sequence of events starting with the skins arriving at the tanners with the horns and part of the skull, as well as the foot bones, still attached (Serjeantson 1989, 139). It was mentioned above that cattle metapodials were an important raw material for the boneworking industry. This could explain the distinct lack of metapodials amongst these deposits, and as horns were sent on to the hornworker, so metapodials may have been sent to the boneworker. Of interest was the recovery of one metatarsus fragment, from [1287] in Building 6, which had been sawn through the shaft close to the distal end. This is typical of boneworking waste and may suggest the presence of such activity in this locality.

Site	Cattle bones	Head and foot	%	Cut bones	%
	N	N		N	
Building 1	37	11	29.7	2	5.4
Building 5	71	31	43.7	0	0

Table7: Proportion of phase 11 cattle skeletal extremities and butchered bones where N is the total fragment count (hand collected bones only)

The character of the sheep/goat assemblage amongst these deposits shows a general trend towards concentrations of metapodials (see Table 8). There are exceptions, including the various fills from Building 6, as well as both the fills and the overlying dumps at the Gatehouse, although there were some bone assemblages amongst the latter deposits (notably [1859] with 11 metapodials out of 14 sheep bones) following the general trend. Such collections are generally interpreted as skinning waste, following the general assumption, as stated for cattle, that skins were imported with their horns and feet still attached. Horncores are poorly represented, which could again relate to the transfer of this raw material to hornworking establishments. The largest individual concentration of sheep metapodials was found in the Building 6 dump deposit [1151] with 279 metapodials out of 284 sheep bones (but also with 2 phalanges). These foot bones comprised 274 metacarpals compared to just 3 metatarsals. Almost all the former bones (246) were proximal end fragments, with 52 chopped and snapped through about a quarter of the way down the shaft. This interesting assemblage raises three important issues - why are there more foreleg foot bones (metacarpals)? What was the purpose of chopping through the shaft, especially in such a consistent manner i.e. close to the proximal end? And what happened to the distal ends? No obvious explanation is forthcoming for the first question, but a relatively recent find at 8 Tyers Gate (Divers *et al.* 2002), a little to the west of the Tower Bridge sites, may well answer the second and third questions. This site provided a remnant of a 'knuckle-bone'

floor, comprising approximately 3,000 sheep metapodials, arranged vertically with distal ends uppermost. A sample of 338 bones were recorded, and these included approximately similar numbers of metacarpal and metatarsal distal end fragments, with the great majority broken, although not obviously chopped, through the shaft close to the proximal end. It was postulated that the breakage of the bones was not necessarily related to the construction of the floor, and indeed other floors composed of sheep metapodials have been recovered e.g. at Tabard Square (Yeomans 2002a), where a large proportion of the bones are complete. Rather, the floor maker was probably making use of available raw material, which happened to be broken in this manner. The reason for this breakage must relate to a particular process occurring at the probable source of such a large quantity of sheep metapodials. Clearly these were provided by the local tawing yards where it can be assumed that the bones were broken 'to facilitate the removal of the grease contained in their marrow cavities' (Divers *et al.* 2002).

The sequence of events concerning the Building 6 [1151] metacarpals could therefore have involved breakage of the bones, heating/boiling to remove their fatty contents, and subsequent removal of the distal ends for constructional purposes. It is tempting to suggest, especially considering the Tyers Gate evidence that the consistent manner of breakage, close to the proximal end, may actually relate to this final stage of the process, perhaps complying with a requirement from a very particular floor maker.

The sheep metapodial collections from the other areas generally feature an equal proportion of metacarpals and metatarsals, with the notable exception of fill [1101] in Building 5, with 22 metatarsals compared to just 3 metacarpals. None of these collections provided more proximal than distal end fragments, however, there is a notable lack of complete bones. Very few of the broken bones, unlike those from [1151], show any butchery marks. The great majority of the metapodials from all of these collections are from adult animals, as shown by the fusion of 70% of the distal ends, marking individuals older than 2 years of age.

Site	F/D	Sheep/Goat	Metapodials	
		N	N	%
Gatehouse	F	47	15	31.9
	D	196	49	25.0
Building 6	F	36	15	41.7
	D	284	279	98.2
Building 5	F	72	44	61.1
	D	14	13	92.9
Building 1	F	94	51	54.3
	D	28	19	67.9

Table 8: Proportion of sheep/goat metapodials in Phase 11 deposits, where F equals underlying fills and D the overlying dumps, and N is total fragment count (hand collected bones only)

Several of the other species present provided evidence for some craft usage, here including goat, horse and cat. The former species is rather poorly represented, and solely by horncores, with a slight concentration (9 bones) from adjacent dumps [1842] and [1846] in the Gatehouse area. Notably all of these cores were from adult female animals. Horse is better represented, especially in the Building 5

(49 bones) and Gatehouse areas (28 bones). The former total is largely taken from the partial remains (skull, vertebrae and pelvis/sacrum) of one adult individual from pit fill [1000], while the latter mainly represents a minimum of three horses (two old adults and a pre-adult) taken from dump [1846]. Two out of the three animals in the last deposit had been butchered, with a division of the carcass and probable defleshing marks. The general old age of the horses represented suggest the presence of a local knackers yard where these animals were undoubtedly killed, flayed and, to a certain extent, butchered and defleshed. This meat may have been meant for canid consumption, perhaps catering for wealthy clients, as shown by the presence of butchered horses from 17th century levels at Walthamstow Low Hall (Blair 2002, 200). Alternatively, they may have provided meat for the dogs used in the Bankside bear baiting arenas, the last of which was demolished in 1682. Butchered horse bones were a notable feature of the 16th/17th century sites excavated in this area (Liddle 2000, 53). Lastly, a cat skull from dump [1768] in the Gatehouse area displayed some fine knife cuts adjacent to the orbit which can be interpreted as skinning marks. The use of cat fur for various garment trimmings was relatively popular during the medieval through to the early post-medieval era (see Serjeantson 1989, 131), as witnessed by large quantities of cat bones at some late medieval city sites (see Liddle in prep. and Rielly in prep. a).

Finally, a portion of the assemblages from each of these sites undoubtedly represents food waste, as shown by the presence of non-craft waste species as pig and chicken, the recovery of numerous sheep bones taken from the meat-rich parts of the carcass, as well as a similar variety of cattle bones in a somewhat lesser state of fragmentation than those interpreted as oil/fat extraction waste. In addition, there were slight representations of hare and rabbit (from the sieved collections), which could be small mammal skinning waste and/or food waste.

Post-medieval industry 2 (Phase 12)

The sequence of events is similar to those described for the previous phase with further industrial activity followed by dumping/consolidation, this marking the culmination of tanning/tawing at this location. However, unlike the last phase, a far greater proportion of the bones were taken from the various structural features, this coinciding with a series of well preserved tanning pits, especially in the southernmost area – Building 1. Most of the Gatehouse assemblage (403 out of 427 fragments) was recovered from the primary fill of one large pit [1666], which may have originally been used for leather working purposes. Almost all the bones from this feature were either cattle or cattle-size, with 154 and 229 fragments respectively. These are similar to the heavily butchered and fragmented collections described from Phase 11 (and see Table 9). The Building 6 bones, a total of 261 fragments, were largely retrieved from a large rectangular pit [1474] and adjacent cut feature [1480] (71 and 57 bones respectively) and from a posthole [1185] (79 bones), this amongst a series of such features in the northwestern part of this area. The assemblages are very similar to those from the Gatehouse area, with the notable exception of a greater proportion of horse bones (39 fragments, see below). The great majority of the sieved assemblage dated to this phase was retrieved from the Building 6 pit [1478], this with 1,025 fragments, composed of large collections of cattle-size and sheep-size fragments

accompanying a small collection (23 bones) of sheep/goat metapodials and phalanges. All of these bones had been burnt and may well represent hearth debris.

Site	Cattle bones	Head and foot		Cut bones	
	N	N	%	N	%
Gatehouse	161	4	2.5	120	74.5
Building 6	95	10	10.5	55	57.9
Building 5	12	10	83.3	2	16.7
Building 1	158	103	65.2	29	18.3

Table 9: Proportion of phase 12 cattle skeletal extremities and butchered bones where N is total fragment count (hand collected bones only)

This phase at Building 5 is represented by a good number of features, clearly industrial in nature, but by very few bones, these limited to just 12 cattle, 8 sheep/goat, 2 horse and one cattle-size fragment. Though small, there are interesting points. The 12 cattle bones were largely taken from a cache of 8 horncores from a small pit [862], while all but two of the sheep/goat bones are metapodials (see Tables 9 and 10). The Building 1 area provided the largest proportion of the phase 12 bones (450 fragments or 35.1%). Most of these were recovered from the two large multi-tanked tanning pits towards the southern part of this site, [503] and [333], which provided 176 and 192 fragments respectively. Each of these produced approximately equal numbers of cattle and sheep/goat bones, which is clearly different to the usual cattle dominated features/areas found elsewhere in this phase. Indeed looking at the figures there are 158 sheep/goat bones in Building 1, which makes 35.5% of the total number of bones from this area or 74.4% of the sheep/goat bones found in all 4 areas. Compare this to the next best area, which is Building 6, which has just 25 bones, 9.6% of the area total and 11.6% of the sheep/goat total. The sheep/goat bones from Building 1 largely comprise head and feet elements (130 out of 162 bones – 81.2%) with a large proportion of metapodials (89, 54.9%).

Site	Sheep/Goat	Metapodials	
	N	N	%
Gatehouse	20	6	24.0
Building 6	25	8	40.0
Building 5	8	5	62.5
Building 1	162	89	54.9

Table 10: Proportion of sheep/goat metapodials in Phase 12 deposits, where N is total fragment count (hand collected bones only)

The highly fragmented and butchered cattle remains clearly represent further dumps of oil extraction waste. These were again mainly concentrated in the Gatehouse and Building 6 areas and again featured few head and foot parts (see Table 9). However, unlike the Phase 11 dumps, there was a lower level of fragmentation, as shown by the greater proportion of identifiable pieces (compare the numbers of cattle and cattle-size fragments in Table 4). This may suggest a different extraction technique or perhaps a greater mixing of waste items from industrial and other sources. This phase is clearly represented by a larger proportion of cattle tanning waste, with a notable concentration of horncores in Building 5 (see above) and also in Building 1. The latter area provided a total of 37 cores

(out of a total of 158 cattle bones) and the majority were recovered within the two large tanning structures [333] (16 cores) and [503] (15 cores).

There are some slight concentrations of sheep metapodials but nothing to compare to the major assemblages recovered from the previous phase. They are clearly best represented in Building 1, where they tend to be scattered amongst a number of features, with notable quantities in tanning structures [333] (20 bones) and [503] (19 bones). Other differences include a lack of any obvious preference for metacarpals or metatarsals as well as the recovery of a large proportion of complete bones. The fragmented bones do not conform to any particular breakage pattern and there is no evidence for a biased representation of proximal as against distal end fragments. A large proportion (94.0%) of the distal ends were fused (63 out of 67), which again is somewhat different to the Phase 11 data. Of interest, was the recovery of the burnt sheep metapodials from the Building 6 pit fill [1478]. It has been assumed that a large proportion of the metapodials were heated/boiled in order to remove their fatty contents. These burnt bones may therefore represent hearth sweepings from one of the fires used in this process. The general impression is that these smaller quantities of metapodials may suggest a decline in the importance of tawing in this locality, which appears to coincide with a possible increase in tanning activities, assuming a direct link between such activities and the incidence of cattle horncores (see Conclusions).

There is again a mix of food and industrial waste amongst the major domesticates with the former including a small number of other species, such as chicken and goose and also deer, represented by two tibias, each from Building 1 deposits. The non-food species include horse, dog and cat, with the great majority of the horse remains arising from a single fill [1480] in the Gatehouse area. These represent the remains of at least two adult individuals, one of which displayed a series of ankylosed (fused) lumbar vertebrae, which could be a result of either advanced age and/or carrying/pulling heavy burdens. In addition, a metacarpus from the same deposit showed a series of grazing cuts on the posterior side of the shaft, which probably represent skinning marks. The probable advanced age of these animals and the butchery evidence suggests the continued presence of knackers yards in this area and that these clearly supplied some skins to the local leather working industries.

Post-medieval industry 3 (Phase 13)

This phase was marked by the construction of brick buildings within the Gatehouse, Building 1 and Building 5 areas. It is assumed that these relate to the vinegar works rather than a late development of the tanning industry (although see below). Bones were recovered from various features that were associated and/or deemed contemporary with these structures. The greatest concentration of bones was recovered from the Building 5 area, with 213 fragments, coinciding with a greater proportion of cut features. Amongst the selection of pits, there was a large timber-lined tank structure [820], which, alongside a flat-bottomed circular pit [929] were tentatively identified as tanning pits. The first provided very few bones (12 fragments from the pit lining), while the fills of the second produced 151 fragments. In addition, a reasonable collection (28 fragments) was recovered from linear cut [922]. This last collection was mainly composed of the partial remains of at least two adult dogs. Unusually one of the

dog forelimb bones (a radius) displayed a series of cuts to the anterior shaft surface, which could represent defleshing or perhaps more likely, skinning marks. The larger collections featured a dominance of cattle and cattle-size pieces with a substantial proportion of sheep/goat and sheep-size bones. There was no notable preference for any particular cattle or sheep/goat skeletal part and neither species exhibited much butchery. The remainder of the phase 13 assemblage was recovered from the Gatehouse area, this providing just 20 fragments taken from two brick-lined pits [1692] and [1686]; and from Building 1, with two brick floors [264] and [265] providing 6 fragments. Each of these small collections are largely composed of cattle and cattle-size fragments accompanied by a few horse, sheep/goat and pig bones. Of interest was the recovery of three deer bones, all from Building 5, comprising a red or fallow deer radius and tibia from pit [929], a calcaneus from pit [872] and a radius from the lining of tank structure [820]. These account for 4 out of the 6 deer fragments derived from all phases of activity at these sites.

In short, there is no obvious evidence for post-mortem industrial activity, with the great majority of the bones most probably representing dumps of processing and food waste. Note also the rather poor representation of horse bones. There is the cut dog bone, possibly representing waste from some small mammal skinner and a thin spread of cattle horncores (in the Building 1 and 5 areas). However, these may well represent residual items from the previous phase activities.

Post-medieval Industry 4 (Phase 14)

The secondary development of the buildings constructed in Phase 13 provided a wealth of construction features. However, these were accompanied by relatively few cut features and, where present, generally provided only minimal quantities of animal bones. Thus, in Building 5, there are 18 fragments largely derived from the backfill of a well [876]; in Building 1 there are 5 bones from the fill of drain [285]. However, the fills within a timber-lined pit [1652] in the Gatehouse area did produce a reasonable collection (102 fragments). The latter assemblage was mainly composed of cattle and cattle-size pieces as well as the partial remains of one adult and one sub-adult dog. Sheep, pig and horse were also represented, while another deer fragment (a tibia) was taken from a dump deposit in the Building 5 area. The cattle and sheep bones from these collections are similar to those described from Phase 13.

Late 19th-20th centuries (Phase 15)

This phase produced a very small quantity of bones, the hand collected entirely derived from a made ground deposit [236] and the fill of a soakaway [235] in the Building 1 area, with an additional 4 fragments taken from a sample of a floor surface [1820] at the Gatehouse. These collections featured the usual major domesticates.

CONCLUSIONS

The division of the various bone assemblages described in this report has been undertaken purely on stratigraphic grounds. The preliminary data appears to broadly agree with the stratigraphic phasing. Thus Phases 9 and 10 mainly date to the 17th century, 11 and 12 to the late 17th and 18th centuries, while Phases 13 and 14 are essentially 19th century. In addition there appears to be a broad shift from late 17th to early 18th for Phase 11 and early to late 18th for Phase 12. It should be stressed that the agreement between stratigraphy and dating is rather broad and several deposits may well, following a more thorough analysis, move up or down a phase. This is particularly relevant concerning the dating of the earlier phases i.e. up to Phase 10. Each of these provided some concentrations of sheep metapodials, which have been interpreted as industrial waste (see below). Their presence may suggest an industrial usage of the locality for a considerable period of time or may actually refer to such activity no more than 50 to 100 years before the construction of the industrial complex at this site in the early post-medieval era.

Industry

The archaeological evidence clearly demonstrates the industrial nature of the site from approximately the late 17th century onwards, this coinciding with the tanning pits dated to Phases 11 and 12, and the subsequent buildings related to the Vinegar Works, dated from the early 19th century within Phase 13 and later. Several of these tanning structures, as well as various contemporary features and dumps, have provided concentrations of sheep metapodials and, to a lesser extent, of cattle horncores. In combination with the noted structural evidence and comparable stratigraphic and faunal data from numerous other sites in Britain and abroad (based on Albarella 2003, 75-77), these items can be interpreted as tawing and tanning waste respectively. The latter process refers specifically to cattle hides, also known as the heavy leather trade, while the former, the light leather trade, includes all other skins (*ibid*, 73). It was noticed that sheep metapodials became less frequent while cattle horncores were more abundant by Phase 12, perhaps suggesting a move away from tawing to tanning. While this shift could be explained by the vagaries of deposition practises, it is worth noting that a similar and possibly contemporary change was apparent at the nearby site of Vinegar Yard, 33 Tanner Street (Heard 2000, 141-2). One of the latest tanning pits at this site was larger than previous examples and was interpreted as being more suitable for cattle than sheep skins (*ibid*, 143). In addition, two horncore-lined pits were recovered at local sites, one at 211 Long Lane (McKinley 2006, 91 and see below) and the other at 100-104 Bermondsey Street (Killock 1999, 131), both dated to the 18th century. This evidence must, however, be weighted against the discovery of a horncore filled pit dated to the 16th century from 8 Tyers Gate (Divers *et al.* 2002, 70 and see below), as well as the likelihood that the late 17th century yards at 211 Long Lane and also further east at 49-51 and 53-65 Tanner Street, may have been preoccupied with tanning from the outset (McKinley 2006, 91; Ridgeway 2002, 110; Yeomans 2002b). The latter two sites provided a timber-lined tanning pit and a small but significant concentration of horncores respectively. Notably, there is no obvious increase in

tanners at the expense of tawyers in the historical evidence from this part of Bermondsey during the 18th century (Yeomans 2004, 78). It is possible that the suggested change may have already occurred by this period, with some yards specialising, or increasing their involvement, in the heavy trade earlier than others. This is obviously an area for further historical research, perhaps with an emphasis on changes within particular tanyards and/or tawyers yards.

Concentrations of sheep metapodials in Phase 9 and 10 deposits, essentially predating the industrial complex, are of some interest concerning the spread of tanning activities in this area. It is known that this general locality was amongst the main areas of expansion of the Bermondsey tanning industry with numerous yards set up from the later 17th century (McKinley 2002, 91). However, the evidence from the Tower Bridge Road sites may suggest a somewhat earlier start date. Similarly, large dumps of sheep metapodials were recovered from a series of pond fills at 33 Tanner Street, also predating the tanning structures found at this site, dated to the later 16th century (Heard 2000, 140). In addition, two sites in the area of Battlebridge Lane provided further collections of sheep metapodials and an abundance of sheep horncores, also from pond fills dating to the 16th century (Rielly 2000a, 37; 2000b). The combined evidence would clearly suggest the importance of tawing rather than tanning during this early phase of the leather industry. There is, however, one notable exception, a large number of cattle horncores forming the backfill of a pit at 8 Tyers Gate, which is likely to date to the 16th century (Divers *et al.* 2002, 70). A contemporary feature at this site, a large round pit lined with timber planking has been interpreted as a tanning pit. In addition, there would appear to be evidence of a possible water supply network for local tanyards, as interpreted for 16th/17th century gullies recovered at Brunswick Court and 283 Tooley Street, these situated just to the west and north-east respectively of the Tower Bridge sites (see Drummond-Murray *et al.* 1994, 256). Thus it can perhaps be assumed that the described early dumps of tanning and tawing waste may well have originated from various leather working establishments within this general area of north Bermondsey.

A notable feature of the sheep metapodials throughout the Tower Bridge Road phases is that relatively few are complete. It was postulated that this breakage was deliberate, with the likely intention of facilitating the extraction of various fatty substances contained in the bones. Of particular interest in this respect was the production and supply of "neatsfoot oil", a prerequisite of leather dressing, obtained by boiling large quantities of sheep feet in vats (Divers *et al.* 2002, 74; Serjeantson 1989, 140). While it might be assumed that no further use could be derived from these bones, compelling evidence was put forward to suggest that tawing waste might then have been used to construct one or more "knuckle-bone" floors. This was based on the make-up of an early 18th century "knuckle-bone" floor at 8 Tyers Gate, which was composed of sheep metapodials (Divers *et al.* 2002, 72). The breakage pattern of these bones appears to be a mirror image of that shown by a large concentration of sheep metapodials from a Phase 11 dump at the Building 6 excavation area.

A number of sites in this area, including 169 Tower Bridge Road, London Bridge City (adjacent to Battlebridge Lane) and 159-161 Tower Bridge Road (Rielly 2000a; Elsdon 2001, 279-280), have produced copious quantities of horse bones. In each case there are various skeletal parts with butchery marks, suggestive of skinning, subdivision of the carcass and defleshing. It is noticeable that

these collections are largely dated to the late 17th/18th centuries, although the examples from Phase 9 may be somewhat earlier. In addition, a few bones with both skinning and defleshing marks were recovered from the aforementioned late 17th century pit at 53-65 Tanner Street (Yeomans 2002b). The great majority of these horses are relatively old and they undoubtedly derive from some local knackers yards, where, presumably, the carcasses were flayed and portions of the carcass were then processed. There is no evidence to suggest that this horseflesh was meant for human consumption and the general assumption is that it was intended for dogs. It would seem likely that some of these tanning/tawing sites also dealt with horse skins. The presence of the meatier parts of the carcass at the same sites would perhaps indicate the general deposition usage of these late 17th/18th century features.

As well as the tawing/tanning and horse bone waste, a major contribution was made by large dumps, specifically in the Gatehouse and Building 6 areas dated to Phases 11 and 12, of heavily fragmented and butchered cattle bones which have been interpreted as oil extraction waste. They may represent waste from a local glue maker, of which there were several in this general area throughout the 18th century (see Yeomans 2004, 77; Ridgeway 2002, 110). The constituents of these assemblages are of interest concerning the distribution and organisation of post-mortem products. Notably, each of the major limb bones is represented, with the exception of the metapodials, and there is also an abundance of phalanges. The absence of metapodials may be explained by their importance for boneworking, the phalanges were probably derived from tanyards, while butchers and/or domestic recycling (the rag and bone collectors) may have provided the other limb bones. Metapodial bone working waste is shown by concentrations of proximal and distal end pieces, all sawn through the shaft close to the articular end. Such a collection was discovered within a 17th century pit fill at Spitalfields (Rielly in prep. b). A single sawn metapodial was found in a Phase 11 deposit, clearly suggesting that boneworking was in evidence in the locality at this time.

Food

The general industrial waste is mixed, to varying degrees, with food waste. This is rather difficult to differentiate from industrial waste within Phases 11 and 12, but features as the main constituent of the Phase 13 and 14 assemblages. Of some interest was the recovery of swan and crane from one of the Phase 9 deposits, which could be indicative of food waste from a rather affluent household. This could relate to the estate of Sir Thomas Pope, who took over the Bermondsey Abbey estate after the Dissolution (Ridgeway 2002, 109), or perhaps to one of his descendants, at a time prior to the development of this area for industrial purposes. A similar status maybe surmised to explain the deer bones from Phase 13, although here they probably represent the meal of some rich industrialist.

RECOMMENDATIONS FOR FURTHER WORK

The main value of these assemblages is that they have the potential to provide a wealth of information concerning the history of the various noxious animal product based industries in this part of North

Bermondsey. Topics of interest will include the tawing and tanning industry, horse knacker and glue boilers. The previous text has emphasised the close links between these various industries and it is highly recommended that further information be sought (mainly historical) to better explain these ties. This assessment has dwelt mainly on the species and skeletal part aspects of these assemblages. Any further work should include an analysis of age and size data, examining the possibility of selection, for example, for particular hides or sheepskins. However, as well as the industrial aspects, there is also the evidence for food use. As mentioned, discerning the food waste data will be easier amongst those assemblages either side of the late 17th/18th century phases, although even these phases did produce several collections which are clearly related more to food than industrial waste. The object of this exercise will be to determine food preferences and/or the nature of the supply network provisioning this area during the post-medieval period.

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APPENDIX 13

ASSESSMENT OF THE WOODWORK TECHNOLOGY

Damian Goodburn

BACKGROUND

The site lies in north Southwark to the north of Tanner Street in the historic leather working area. The area is low lying with a high water table, conditions which have preserved the historic woodwork assessed here and at a number of other excavations in the immediate locale. Many areas in the City of London, Southwark and their hinterlands are waterlogged, resulting in a large corpus of historic woodwork being investigated, analysed and published. This writer has been involved in the vast majority of this work since 1986, and it is against that background that this summary specialist assessment is made. Most of the assessment comments are based on an informed reading of the various site records bearing on the woodwork kindly sorted and provided by P. Boyer as well as a review of 20 timber elements retained off-site. In many cases details such as the species or conversion type used in the woodwork concerned are uncertain as the material could not be kept.

Typical woodwork encountered in this area of Southwark includes timber lined tanning pits, watercourse revetments, timber and log pipes and drains, timber lined wells, timber building foundations and sometimes tree stumps of now buried historic trees.

METHODOLOGY

The timber records for the project have been examined by this writer for key woodworking details, which have then been summarised here. Twenty items of worked timber and roundwood from the project were cleaned and recorded individually by this writer and the additional records added to the main site archive. The principal records of this lifted sample of the woodwork were annotated scale drawings on gridded film and those records are in accordance with the EH Guidelines on Waterlogged Wood, and the Museum of London 's Archaeological Field Manual 2nd edition. Species and conversion type were noted for this material where possible.

The additional drawings are on 5 sheets of film and additional information is also noted on timber sheets and copied timber records where appropriate. A total of two tree-ring and five species identification samples were taken, and retained with the project archive.

COMMENTS ON KEY WOODWORK INVESTIGATED, OUTLINED IN ORDER OF INITIAL PHASING PROJECT WIDE

Initial Phasing Information

The initial phasing of the stratigraphy and structures on the site has been carried out by P Boyer who kindly sorted and noted phasing on copies of 'timber records'. Some alterations or refinements of the phasing may be made in due course.

Limitations

Where the recorded information was seen to be very sparse during the review of the records the items have been ignored here. Such cases often involved one or two isolated timbers, which were not lifted e.g. TBB03 [801]. Nothing can usefully be added by this writer in these instances.

NB. The term 'wattle' used in the records appears to have been used for hoops of reused cask as is explained below.

WOODWORK OF PHASE 11 c 17th to 18th century (Post- Med Industry 1)

TBB03 Structure [1453].

This loosely defined structure was made up of a group of seven horizontally-laid, squared beams (not clearly 'baseplates' as they were not jointed for uprights) which were located by two or more driven squared piles (plan [1453]). The beams varied between 0.6m and c. 1.2m long. The function of the timber layout is uncertain but it seems likely that it may have formed part of a foundation grid for a dismantled building. If so it was not a typical method of spreading foundation loads in wet ground in London.

A simple plank lining to a shallow rectangular tanning pit TBB03 [1532]

This small, shallow, rectangular tanning pit was just over 1m square and probably used for small hides. The timbers were not lifted. The base comprised eight planks of varying widths, and the sides four sat on edge. The plan seems to indicate that the planks were only wedged in place, a very simple construction.

A simple box drain [445]

This plank box drain was found in truncated condition, with most of the lid plank rotted out as were parts of the upper sides. The drain was c. 150mm wide and over 120mm deep.

Simple plank box drain [450]

This plank box drain was only briefly recorded and no parts were lifted, from the sketched records available the proportions appear to have been similar to those described above.

Log 'drains' or water pipes Str. [1076] etc

Several sections of log drain or water pipe were found and are phased to this broad phase e.g. [992] and [993] of drain [1076]. Drain log [992] was tapered down to fit inside a tapered end of log [993], away from the joint the latter log was hewn square. None of the material was retained, but we can suggest that it was probably of elm. Both drain logs were c. 350mm in diameter, with truncated ends. Unfortunately the bore of the pipe could not be recorded. These log pipes are fairly common in Southwark from the 17th century onwards, indeed it was something of a local industry to produce them.

Another pair of wooden pipe sections were also found in drain [1055]. These pipes were somewhat larger than those above at c. 0.5m in diameter and had a bore of 230mm.

A collection of reused cask hoops, ('wattle lining' of pit [1002])

Here a reused cask had been dismantled by removing any ends and the staves leaving the fragile roundwood cask hoops. These were all labelled [1001] and were set in two bands of three. There were no wattle uprights. Such a cask may well have been used for tanning small hides (see below).

A reused cask [1023]

This cask survived as partially articulated 'heading' boards (cask end) and staves surviving up to 0.38m tall with a diameter of 0.8m. This cask was probably reused as a small tanning pit. No elements were lifted for detailed recording.

Traces of a removed cask , cask hoops [1042]

A distorted oval of three closely set cask hoops was found [1042], showing that a cask had once been set in the ground at that point and then removed at a later date. The hoops were probably cleft roundwood bound with vegetable fibre i.e. split willow. However, the fragments were not lifted for further examination.

Traces of another removed cask, cask hoops and head piece [1045]

These ephemeral cask traces survived in a similar way to those above as pair of cask hoops and what appears to have been one head piece board. None of which were lifted.

WOODWORK OF PHASE 12 c 18th century (Post-Med Industry 2)

Timber lined tank structure [1294]

This structure was made of close set planking, forming the base of a tank with edge planking joined with a housing joint at each corner. Little detail was recorded, but it resembles the upper parts of structure [820].

Reused cask TBA 03 [898] and plank box drain [905]

These two assemblies appear to have been installed together. Perhaps the cask was reused as a tank, sump or silt trap fed by drain [905]. This cask was c. 1m in diameter and had five narrow head pieces. It was not lifted. Part of the box drain [905] was lifted and recorded off-site. It had collapsed and was very crushed but it could be seen that it had been made out of four, sawn softwood planks (prob 'Scots pine'). Traces of corroded iron nails were found in places suggesting that originally it was nailed together. Such box drains of softwood are known from the late 16th to 19th centuries in London.

A series of timber-lined tanning pits TWG 00 [314], [322] , [437] and others

These timber-lined tanks were rapidly excavated and recorded only in outline, without the timbers being lifted. The bottoms appear to have been made up of six regular planks c. 200mm wide. The side planks were retained by squared corner piles (see plan, lining [314] little can be added).

The truncated remains of six other plank-lined tanning pits were also briefly investigated and have been allocated to this phase 12 period [372], [376], [357], [380], [384]. None of the timbers of these structures, it appears, were lifted.

A wattle lined pit? Or robbed cask-lined pit? Contexts [326] and [334]

It has recently been found, on a number of post-medieval sites in London (e.g. Bow China Works, More London Bridge etc.) that second hand cask linings of cut features were sometimes partially dismantled so that the staves could be reused. This dismantling process left behind the degraded roundwood hoops stuck to the backfill of the construction trench, and sometimes the base or 'head' pieces of the cask as well. In some medieval casks it has been found that they were almost completely covered by hoops. This historic process has given the false impression of a circular wattle lining above the cask head pieces, [334] in this case. Casks appear to have been reused as tanning pit linings for use with small hides.

Reused cask end left *in situ* in circular ex-tanning pit [334]

Six separate boards had been used for this cask end ('head'), of which five survived *in situ*. Four solid but decayed elements were seen off-site and were found to have been axe hewn from cleft oak. Most of this material was slow grown, and radially cleft but the narrowest piece was tangentially faced oak. The total diameter was c. 0.8m and the boards were c. 30mm thick. The pieces were edge joined, by planning, followed by fitting c. 10mm diameter edge pegs. Sapwood survived on some of the head pieces and two were sampled for tree-ring study, (see drawing). The 'basal' or edge bevel cut to fit the croze groove in the staves was worked on one side only.

Hoop fragments from the reused cask [326]

Fragments labelled as Timber [326] were cleaned off-site and found to have been sections of cask hoop made from deciduous roundwood split in half and shaved to shape. The ends were tapered where they overlapped and bound with split vegetable fibre, probably one year old willow. Both the hoop and binding materials were sampled for species ID.

Small timber tank [968] and some of its elements, including a possible wheelbarrow side [968]c

Plan evidence records a partly dismantled plank lined tank with planks on edge and light timber stakes retaining them. Diagonally across the bottom lay an oddly shaped worn plank ([968]c possibly earlier?). Much of this plank was lifted but it was somewhat dried out when examined off-site. The plan shows a rectangular recess for a timber joining it at 90 degrees and a curved rounded end. The lifted plank was of sawn elm c. 0.27m thick (originally +30mm?) and the form of it suggests that it may have been the side of a wheelbarrow. It also had two holes c. 20mm diameter surrounded by a pattern of 4 tacks which may be a relict of the securing of small metal patches or washers?

Another timber reused in this tank was [968]a, a sawn pine plank with several relict nail holes indicating previous use. Timber [968]b was 0.79m long by 80mm by 40mm thick. It was elaborately worked with two narrow planed rebates and white paint on one face. It also had several corroded iron nail shanks and one nail head on one face. An origin in some form of joinery such as a large window frame is suggested.

Dumped planks [969] etc

A jumble of eight plank fragments [969], of uncertain function, was excavated and found to contain some probably reused material. This included the lifted elm plank fragment [974], which had a relict hole in it.

Sawn off end of a stave built cask [968]

This group of timber was the sliced off end of a cask c. 0.10m long and c. 840mm in diameter with the heading and staves still articulated. The heading had several cross battens and the whole was held together with a set of roundwood hoops. This may have been reused as a stand for other reused casks.

Timbers of a well capping platform Str. [1033]

Five thick planks were found lying set side by side over a well void. This capping structure was robust enough for the excavators to stand on. Although none of the timbers were lifted it can be seen from the plans that at least three were second hand. On site it was noted that some of the timber had 'tree-holes and wooden pegs'. These appear to have been ship 'treenails' and two of the timbers can be fairly described as probably sections of carvel ship planking. Southwark was a centre for wooden ship breaking and this type of timber was widely used below ground from the 16th to 19th century. The origin of the other three timbers is uncertain.

WOODWORK OF PHASE 13 c. late 18th to early 19th century (Post-Med Industry 3)

An elaborate timber lined tank [820] TBA 03, possibly part of a second hand punt or pontoon??

This complex timber structure was 3.59m 'wide' and was partially truncated by later features so its 'length' is unknown. Although the structure does appear to have been used as a large timber-lined tank, with its external clay seal, it is of very unusual form. The bottom planks of the rectangular tank were apparently fastened with 'treenails' to underlying cross wise beams ('joists'). Strangely, the cross beams were also fastened to an underlying layer of flush laid planks, i.e. Structure [820] had a double layer of close set bottom planking (Sect 1 TBA 03). The sides of the tank were made of thick planks or beams, close fitted one on top of another edge wise, and secured by long iron clench bolts. The depth of the side was c. 1m if we can judge from the height of the surviving iron side bolts. As the excavators were immediately aware the large structure must have been pre-assembled at ground level (on a building platform). In some ways this structure resembles most closely an industrial revolution period flat bottomed boat or pontoon rather than a typical timber lined tanning pit. Indeed the structure closely resembles that of the 'carpenter made', rather boxy, square punts used on the sheltered canals of the Faversham gunpowder works of c. 100 years ago. It also has some similarities to the 'Binsey Boat' of similar date, partially excavated on the upper Thames recently. The clench bolting of side planks to bottom planks is also documented in early 'narrow boat' construction (e.g. in fragments from MoLAS site SYBRI 01, Chertsey). It may be that one of the small, square-hulled punts type craft was bought for reuse as a timber tank by a local tannery owner and dragged into the pit excavated for its reuse? The patterns of some fastenings and occasional joints indicate that some of the timbers used may well have been reused. The likely origin of this complex structure could be examined in more detail during the analysis phase of this project.

A simple plank lining to a pit TBB03 [1652]

The use of a timber lining in this industrial pit contrasted with the complexity of that described above, consisting of planks simply set within a rectangular pit. The lining was partially robbed before the pit was backfilled and only two basal planks survived .

ASSORTED WORKED WOOD ITEMS OF UNCERTAIN GROUPING

Stake or small pile TBA 03 [475]

This small pile or stake had a rot truncated top but survived 0.8m long by 120mm by 85mm. It was very decayed but was clearly split and axe cut out of a sawn waste slab from the outside corner of a baulk. This sort of material is typical of low status post-medieval work in London.

A small stake or pile tip TBA 03 [1004]

This item appears to have a modern saw cut (?) at one end and an axe cut rough 'chisel' point at the other. It was only 0.18m by 180mm by 80mm and had been cut from the corner of a sawn waste slab of elm. Again this is a typical low cost post-medieval raw material in the area.

A small stake tip TBA 03 [1013]

This stake tip survived 0.24m long by 70mm by 60mm and had been cut from a split ¼ pole of young elm, and given a two faceted tip. Split elm poles are rarely found in the London area as most elm is difficult to split due to its interlocked grain. However, such material has been found in post-medieval contexts in Essex and occasionally elsewhere.

Two bungs for coopered vessels from context [750]

Two slightly tapered cask bungs, 50mm in diameter were found in this context. One was complete and 15mm thick whilst the other was 6mm thick and was a split off fragment. The split off fragment shows that a cask bung was being trimmed somewhere close by, possibly evidence of the work of a cooper. Both bungs were of radially split oak.

A cask hoop fragment from context [1000]

Very desiccated fragments of split roundwood with vegetable fibre bindings were found in context [1000]. Despite desiccation it could be seen that the object was part of a cask hoop.

FURTHER WORK

Once this assessment summary has been fully correlated with the updated stratigraphic account and the samples processed, a short summary publication should be produced. This would include references and some illustrations.

APPENDIX 14

ENVIRONMENTAL ARCHAEOLOGICAL ASSESSMENT

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INTRODUCTION

This report summarises the findings arising out of the environmental archaeological assessment undertaken by *ArchaeoScape* in connection with the proposed development at the former Sarson's Vinegar Factory, 169 Tower Bridge Road, London Borough of Southwark (Site Codes: TWG00, TBA03 and TBB03; National Grid Reference: TQ 33435 79725). During archaeological investigations at the site between 2000 and 2004, Pre-Construct Archaeology Ltd. obtained 8 column samples and 47 bulk samples for environmental archaeological assessment, and possible future analysis, from a variety of archaeological contexts provisionally dated to the Mesolithic/Neolithic, later prehistoric and Roman periods, and from the early post-medieval period up to the 20th century. The aim of the environmental archaeological assessment was to evaluate the potential of the samples for addressing the project specific research questions as outlined in the written schemes of investigation and method statements. These questions broadly focussed on reconstructing the environmental history of the site and its environs, and providing information on the economy and diet of the past inhabitants.

In order to achieve this aim, the environmental archaeological assessment consisted of:

1. Recording the lithostratigraphy of column samples <TWG00 22A> and <TWG00 22B>, <TBA03 13> (section 18), <TBA03 11> (section 17) and <TBA03 12> (section 13), and quantifying the organic matter content (<TBA03 13>, <TBA03 11>, <TBA03 12>) to provide a preliminary reconstruction of the sedimentary history.
2. Assessment of the preservation and concentration of pollen grains and spores (<TBA03 13>, <TBA03 11>, <TBA03 12>) to provide a preliminary reconstruction of the vegetation history, and to detect evidence for human activities e.g. cultivation.
3. Assessment of the preservation and concentration of diatom frustules (<TBA03 13>, <TBA03 11>, <TBA03 12>) to provide a preliminary reconstruction of the hydrological history e.g. water quality and depth.
4. Assessment of the preservation and concentration of macroscopic plant remains (waterlogged and charred seeds and wood) from 47 bulk samples to provide a preliminary reconstruction of the vegetation history, general environmental context of the site, and economy and diet.
5. Radiocarbon dating to provide a provisional geochronological framework for the stratigraphic sequence from <TBA03 11A>.

GEOLOGICAL CONTEXT AND BACKGROUND

The site lies about 400m to the south of the waterfront of the estuarine River Thames. The bedrock here is the Eocene London Clay with an uneven surface between -5.0m and -10.0m OD. The London Clay is immediately overlain by 3-4m of sand and gravel - the Shepperton Gravel - of Late Devensian

age (Gibbard, 1994; Fig.34). The Shepperton Gravel is the product of deposition under periglacial climatic conditions when the Thames occupied a complex of braided channels. The surface of the Shepperton Gravel is uneven and takes the form of longitudinal gravel bars, broadly parallel with the valley axis, separated by lower lying channels in which finer grained deposits are commonly present. During the early part of the Holocene and into the historic period the gravel bars remained as upstanding dry-land areas known as 'eyots'. However, continuing, mainly fine-grained, alluvial deposition and ground-raising associated with land reclamation in the historic period has all but obliterated the last traces of this relief.

The Tower Bridge Road site lies on the southern flank of the Horsleydown Eyot. The present ground level at the site is between 3.43m OD in the north and 2.08m OD in the south. On the basis of the field records relevant to the present account, the surface of the Shepperton Gravel beneath the site appears to be between 0.0m and +0.5m OD. This is consistent with the elevations recorded by Ridgeway (2003) who notes that 'at 169 Tower Bridge Road, the level of the island's surface was recorded at 0.45m OD. It rose from here, initially quite gently and then steeply, to a level of 1.11m OD'. It can be traced to the north to a level of ca. 1.5m OD on the crest of the gravel bar and southward to -2.11m OD beneath the neighbouring channel, indicating an original relief of some 3.6m. Because of this substantial underlying relief, the thickness of the Holocene Alluvium varies considerably. In addition, as Gibbard (1994, p.117) points out, "Towards Southwark the floodplain has been heavily modified by development and in many sections the alluvial sediments are absent, presumably having been removed."

The palaeoenvironment of the Horsleydown Eyot has been investigated at a number of sites including Butler's Wharf (Ridgeway and Meddens, 2001) and Three Oak Lane (Proctor and Bishop, 2002) on the north flank of the eyot and at Tanner Street on the south. At all these sites the lower part of the alluvial sequence takes the form of sands and silts in which organic material becomes increasingly common upward. These mineral sediments, of fluvial or estuarine origin are overlain in several places by a terrestrial peat which is generally regarded as evidence of a marine regression (Devoy's Tilbury IV regression). The peat is overlain by fine-grained sediments indicative of deposition from standing or very slow moving water. Evidence of Bronze Age occupation has been recognised in and on the mineral sediments immediately beneath the peat.

METHODS

Archaeological field investigations (Site codes TWG00, TBA03 and TBB03)

The initial archaeological evaluation comprised the excavation of four trial trenches, recorded under the site code TWG00. The second phase of work involved the excavation of a single trial trench in Building 2 towards the south of the site, recorded under the site code TBI01. The third phase of work, carried out between November 2001 and June 2002, also under the site code TWG00 comprised three elements, the first element was a watching brief carried out on the excavation of underpinning trenches within the shell of Building 3, directly to the north of Building 2 and involved the archaeological monitoring and recording of ten trenches. The second element was an open area

excavation within Building 1, immediately to the east of Buildings 2 and 3. The final element during this phase of work was carried out within Building 2, around the area of the phase 2 evaluation. The following phase of work was an open area excavation in Building 5, located directly to the north of Building 1, carried out between January and March 2003 and was recorded under the site code TBA03. The next phase of work was an open area excavation, carried out in Building 6, to the north of Building 5, between August and September 2003 and was recorded under the site code TBB03. The final phase of work was an open area excavation carried out in the area of The Gatehouse, north of Building 6 and close to the north-eastern corner of the site, carried out between September and October 2004, and also recorded under the site code TBB03.

Two column samples (<TWG00 22B>, <TWG00 22A>) and 19 bulk samples were recovered during the excavations under site code TWG00. Six column samples <TBA03 13 2> and <TBA03 13 1> (section 18), <TBA03 11B> and <TBA03 11A> (section 17) and <TBA03 12A> and <TBA03 12B> (section 13) and 9 bulk samples were recovered during the excavations under site code TBA03, and 19 bulk samples were recovered during the excavations under site code TBB03 (Table 1).

Site code	Sample type	Sample number	Context number	Volume processed (litres)	Volume remaining (litres)	Provisional date	Description	Section number	OD height at top (m OD)	OD height at base (m OD)
TWG00	Column	<22A>	(492), (603)	n/a	n/a	Prehistoric	Alluvium	6	1.14	0.74
	Column	<22B>	(492), (603), (584)	n/a	n/a	Prehistoric	Alluvium	6	0.85	0.45
TWG00	Bulk	<16>	(585)	10	10	Prehistoric	Fill of possible well	n/a	0.68	-0.32
	Bulk	<17>	(611)	10	0	Prehistoric	Fill of small ovoid pit possible fire pit	n/a	0.5	0.35
	Bulk	<19>	(589)	10	?	Prehistoric	Fill of ard marks [590]	n/a	1.49	1.02
	Bulk	<20>	(650)	10	0	Prehistoric	Buried soil horizon	6	0.83	0.73
	Bulk	<1>	(327)	5	0	Post Med	Primary fill of tanning pit	n/a	1.28	1.07
	Bulk	<6>	(371)	10	0	Post Med	Fill of tanning pit	n/a	1.59	0.99
	Bulk	<5>	(356)	20	0	Post Med	Fill of tanning pit	n/a	1.7	1.01
	Bulk	<3>	(311)	18	12	Post Med	Fill of tanning pit	n/a	1.36	1.34
	Bulk	<4>	(340)	30	0	Post Med	Fill of clay tobacco pipe waste pit [329]	n/a	1.83	1.42
	Bulk	<2>	(361)	20	0	Post Med	Fill of pit	n/a	1.49	1.45
	Bulk	<7>	(374)	10	0	Post Med	Cessy fill of [376]	n/a	1.66	?
	Bulk	<8>	(433)	10	?	Post Med	Clinker layer	n/a	1.59	1.42
	Bulk	<13>	(478)	5	0	Post Med	Fill of extensive N-S ditch cut recorded as [486] and [468] to south	5	1.26	0.26
	Bulk	<12>	(485)	10	10	Post Med	Fill of drainage ditch [468] & [400]	n/a	0.92	0.56
	Bulk	<9>	(463)	20	2	Post Med	Fill of drainage ditch [358]	6	0.9	0.65
	Bulk	<14>	(556)	20	0	Post Med	Fill of E-W linear drainage slot	n/a	1.17	0.91
	Bulk	<10>	(464)	20	0	Post Med	Fill of drainage slot [465]	6	1.47	1.05
	Bulk	<11>	(462)	14?	?	Post Med	Dump make up levelling	6	1.69	1.45
	Bulk	<15>	(388)	20	?	Post Med	Fill of [386] possibly timber lined cut	6	1.59	1.56
TBA03	Column	<13 2>	(1078) (1077) (984)	n/a	n/a	Prehistoric	Fills of ditch cut [1079] and overlying soils	18	0.85	0.35
	Column	<13 1>	(1077) (984) (1083)	n/a	n/a	Prehistoric-Roman	Fills of ditch cut [1079] and overlying soils	18	1.18	0.68
	Column	<11B>	(1116)	n/a	n/a	Post Med	Fills of ditch cut [1117]	17	0.55	0.05

			(1121) (1120) (1119) (1118)							
	Column	<11A>	(1116) (1121) (1119) (1118)	n/a	n/a	Post Med	Fills of ditch cut [1117]	17	0.62	0.20
	Column	<12B>	(1061)	n/a	n/a	Post Med	Waterlain sandy silts (colluvium?)	13	0.93	0.43
	Column	<12A>	(1061) (1103)	n/a	n/a	Post Med	Fill of pit [1102]	13	1.32	0.82
TBA03	Bulk	<6>	(1078)	20	10	Pre-historic	Primary fill of ditch cut [1079]	12,15,16	0.43	0.18
	Bulk	<8>	(1096)	10	0	Pre-historic	Fill of probable tree throw	n/a	0.48	0.33
	Bulk	<9>	(1090)	20	20	Pre-historic	Reworked natural sands	9,15	0.65	?
	Bulk	<7>	(1082)	10	0	Roman	Fill of linear cut [1081]	10	0.77	0.23
	Bulk	<5>	(1044)	20	10	Post Med	Backfill of tanning pit [1046]	n/a	0.76	-0.01
	Bulk	<1>	(1000)	10	0	Post Med	Fill of wattle lined pit	n/a	0.67	0.04
	Bulk	<10>	(1102)	10	?	Post Med	Fill of pit	13	1.11	0.78
	Bulk	<4>	(1009)	10	10	Post Med	Waterlain fill of ne/sw aligned ditch [1010]	n/a	0.78	0.45
	Bulk	<3>	(1051)	7	?	Post Med	Fill of linear slot [1050]	n/a	0.76	0.65
TBB03	Bulk	<1>	(1475)	10	0	Post Med	Fill of linear slot [1476]	n/a	0.85	0.26
	Bulk	<2>	(1477)	10	0	Post Med	Industrial fill of industrial cut [1478]	n/a	0.67	?
	Bulk	<3>	(1473)	10	0	Post Med	Lime-lining of lime lined cut [1474]	n/a	0.74	0.41
	Bulk	<62>	(1825)	20	0	Post Med	Primary fill of n-s ditch cut runs across previous excavated areas [1826]	30	1.20	0.80
	Bulk	<66>	(1919)	30	0	Post Med	Fill of linear ditch	n/a	1.15	0.91
	Bulk	<55>	(1823)	20	?	Post Med	Top fill of n-s ditch cut runs across previous excavated areas [1826]	30	1.33	0.78
	Bulk	<50>	(1692)	20	0	Post Med	Humic fill of ovoid brick lined cess pit	n/a	1.10	?
	Bulk	<63>	(1866)	20	10	Post Med	Primary fill of fill of e-w slot [1850] = [1864]	n/a	1.04	0.98
	Bulk	<58>	(1864)	10	10	Post Med	Primary fill of linear slot [1850] = [1866]	n/a	1.13	1.07

	Bulk	<60>	(1877)	30	0	Post Med	Waterlain fill of linear slot [1870]	n/a	1.14	0.84
	Bulk	<59>	(1874)	20	0	Post Med	Fill of e-w slot	n/a	1.25	0.75
	Bulk	<61>	(1867)	10	0	Post Med	Waterlain fill of linear slot [1870]	n/a	1.33	1.25
	Bulk	<64>	(1854)	10	?	Post Med	Fill of n-s slot	n/a	1.35	1.15
	Bulk	<53>	(1830)	27	3	Post Med	Occupation layer	n/a	1.5	1.3
	Bulk	<54>	(1835)	30	0	Post Med	Occupation layer	n/a	1.56	1.44
	Bulk	<56>	(1859)	30	0	Post Med	Sandy silt layer = [1861] and [1860]	n/a	1.53	1.46
	Bulk	<52>	(1838)	20/30?	?	Post Med	Whitish grey sandy silt working surface = [1839] and [1841]	n/a	1.63	1.54
	Bulk	<51>	(1837)	18	?	Post Med	Bony sandy silt occupation layer	n/a	1.74	1.68
	Bulk	<65>	(1899)	30	0	Post Med	Fill of slot [1902]	31	1.24	1.13

Table 1: Details of samples taken at 169 Tower Bridge Road, London Borough of Southwark (Site Codes: TWG00, TBA03 and TBB03)

Lithostratigraphic descriptions

The lithostratigraphy of all column samples was described in the laboratory using standard procedures for recording unconsolidated sediment and peat, noting the physical properties (colour), composition (gravel, sand, clay, silt and organic matter) and inclusions (e.g. artefacts) (Troels-Smith, 1955). The procedure involved: (1) cleaning the samples with a spatula or scalpel blade and distilled water to remove surface contaminants; (2) recording the physical properties, most notably colour using a Munsell Soil Colour Chart; (3) recording the composition; gravel (*Grana glareosa*; Gg), fine sand (*Grana arenosa*; Ga), silt (*Argilla granosa*; Ag) and clay (*Argilla steatoides*); (4) recording the degree of peat humification and (5) recording the unit boundaries e.g. sharp or diffuse. The results are displayed in Tables 2 and 3 (Figure 1), Tables 4 and 5 (Figure 2), Tables 7 and 8 (Figure 4) and Tables 10 and 11 (Figure 6).

Organic matter determinations

Sub-samples were taken from column samples <TBA03 13 2>, <TBA03 13 1>, <TBA03 11B>, <TBA03 11A>, <TBA03 12B> and <TBA03 12A> for determination of the organic matter content (Tables 6, 9 and 12; Figures 3, 5 and 7). These records were important for two reasons: (1) they identified lithostratigraphic units with a higher organic matter content that may be suitable for radiocarbon dating, and (2) they identified increases in organic matter possibly associated with more terrestrial conditions. The organic matter content was determined by standard procedures involving: (1) drying the sub-sample at 110°C for 12 hours to remove excess moisture; (2) placing the sub-sample in a muffle furnace at 550°C for 2 hours to remove organic matter (thermal oxidation), and (2) re-weighing the sub-sample and obtain the 'loss-on-ignition' value (see Bengtsson and Enell, 1986).

Radiocarbon dating

Two sub-samples of peat were taken from column sample <TBA03 11A> (between 0.46 and 0.49m OD and 0.49 and 0.52m OD), were submitted for radiocarbon dating to Waikato Dating Laboratory, New Zealand. The results have been calibrated and modelled using OxCal v4.0.1 Bronk Ramsey (1995 and 2001). The results are displayed in Table 13.

Pollen assessment

Sub-samples were extracted from column samples <TBA03 13 2>, <TBA03 13 1>, <TBA03 11B>, <TBA03 11A>, <TBA03 12B> and <TBA03 12A>, for assessment of the pollen content. The pollen was extracted as follows: (1) sampling a standard volume of sediment (1ml); (2) deflocculation of the sample in 1% Sodium pyrophosphate; (3) sieving of the sample to remove coarse mineral and organic fractions (>125µ); (4) acetolysis; (5) removal of finer minerogenic fraction using Sodium polytungstate (specific gravity of 2.0g/cm³); (6) mounting of the sample in glycerol jelly. Each stage of the procedure was preceded and followed by thorough sample cleaning in filtered distilled water. Quality control was maintained by periodic checking of residues, and assembling sample batches from various depths to test for systematic laboratory effects. Pollen grains and spores were identified using the Royal Holloway (University of London) pollen type collection and the following sources of keys and

photographs: Moore *et al.* (1991); Reille (1992). Plant nomenclature follows the Flora Europaea as summarised in Stace (1997). The assessment procedure consisted of scanning the prepared slides at 2mm intervals along the whole length of the coverslip and recording the concentration and state of preservation of pollen grains and spores, and the principal pollen taxa (Tables 14 to 16).

Diatom assessment

Sub-samples were extracted from column samples <TBA03 13 2>, <TBA03 13 1>, <TBA03 11B>, <TBA03 11A>, <TBA03 12B> and <TBA03 12A> for assessment of diatoms. The diatom extraction involved the following procedures (Battarbee *et al.*, 2001):

1. Treatment of the sub-sample (0.2g) with Hydrogen peroxide (30%) to remove organic material and Hydrochloric acid (50%) to remove remaining carbonates
2. Centrifuging the sub-sample at 1200 for 5 minutes and washing with distilled water (4 washes)
3. Removal of clay from the sub-samples in the last wash by adding Ammonia (1%)
4. Two slides prepared, each of a different concentration of the cleaned solution, were fixed in mounting medium of suitable refractive index for diatoms (Naphrax)

The assessment procedure consisted of scanning the prepared slides at 2mm intervals along the whole length of the coverslip and recording the concentration and state of preservation of diatoms, and the principal diatom taxa (Tables 17 to 19).

Plant macrofossil assessment

A total of 47 bulk samples (19 samples from TWG00, 9 samples from TBA03 and 19 samples from TBB03; see Table 1) were processed for the plant macrofossil assessment. The samples were processed by flotation using a 300-micron mesh sieve by Pre-Construct Archaeology Ltd. The dried residues were sorted 'by eye'. Once with the archaeobotanist, the volume of each flot and residue was measured and recorded in millilitres. These were sieved through a stack of geological sieves and scanned under a low powered stereo-microscope with a magnification range of 10 to 40x. The abundance, diversity (see below) and state of preservation of plant remains in each sample was recorded (Tables 20 to 22).

Abundance

1= "low/occasional" 1-10 individuals
2= "moderate" 11-100 individuals
3= "abundant/high" >100 individuals

Diversity

1= "low" 1-4 species
2= "intermediate/moderate" 5-10 species
3= "high" >11 species

Preliminary identifications were only made of the plant remains. These do not form a full species list. For the purposes of assessment, most identifications are made to genus. Where identifications are made here those for seeds are made from modern reference material and manuals (such as Beijerinck, 1947 and Cappers *et al.*, 2006). Nomenclature and habitat information was taken from Stace (1997) and scientific names are given once in brackets and the common name given thereafter and in the table.

Charcoal assessment

The processed samples were also assessed for charcoal. The dried residues were sorted 'by eye'. Charcoal fragments larger than 4mm³ were examined. Fragments larger than this size are easier to break to reveal the cross-sections necessary and allow more diagnostic features to survive (Smart and Hoffman, 1988). Fragments were scanned under a low powered stereo-microscope with a magnification range of 10 to 40x. During this scanning process non-charcoal fragments were picked out and the transverse sections of each charcoal fragment were recorded and grouped. This enabled the level of preservation, concentration and diversity of identifiable charcoal of each sample to be established. Identifications at this stage were basic, differentiating between hard and soft woods. Main taxa were identified based on the largest number of fragments displaying similar transverse porosity. These were identified using an online wood anatomy atlas (Schoch *et al.*, 2004). The results were recorded and displayed in Table 23.

Mollusca assessment

The processed samples were also assessed for Mollusca. Mollusca fragments were scanned under a low powered stereo-microscope with a magnification range of 10 to 40x. The results were recorded and displayed in Table 24.

RESULTS AND INTERPRETATION OF THE LITHOLOGICAL ASSESSMENT**TWG00: Column samples <TWG00 22A> and <TWG00 22B>; Building 1, Section 6**

Column samples <TWG00 22B > and <TWG00 22A> appear to represent the lower part of a soil developing on a sandy and slightly gravelly water-laid deposit, possibly alluvium (Tables 2 and 3; Figure 1). Unit 1 of sample <TWG00 22A> includes undisturbed vertical root systems typical of soil formation in an alluvial environment. The presence of charcoal in Unit 2 of sample <TWG00 22A> and in sample <TWG00 22B> suggests proximity to an area of human land disturbance.

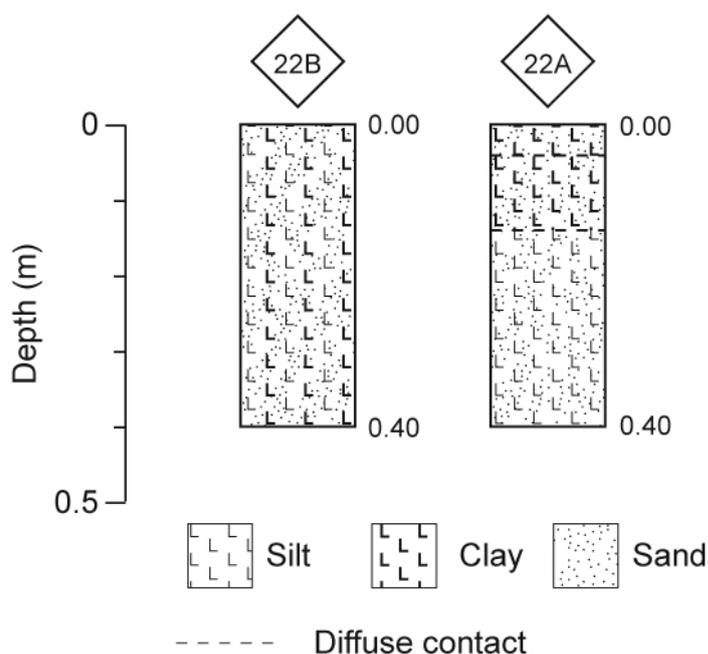


Figure 1: Lithostratigraphy of column samples <TWG00 22B> and <TWG00 22A> (Uncorrected to relative OD)

Depth (m)	Unit number	Context number	Preliminary date	Description
0.00 to 0.04 (1.14-1.10mOD)	3	492	Late Iron Age (Ph 6)	2.5Y5/2 greyish brown with rust coloured (2.5YR4/6 red) Fe-enrichment; moderately sorted sandy clay; massive; root channels with Fe-enriched margins and scattered root remains; faunal burrows with Fe-enriched infill; charcoal; no acid reaction; gradual transition to:
0.04 to 0.14 (1.10-1.00mOD)	2	492	Late Iron Age (Ph 6)	2.5Y5/2 greyish brown with rust coloured (2.5YR4/6 red) Fe-enrichment; moderately sorted clayey sand with scattered flint clasts (up to 15mm); massive; root channels with Fe-enriched margins and common root remains; charcoal; no acid reaction; gradual transition to:
0.14 to 0.40 (1.00-0.74mOD)	1	492, 603	Late Iron Age- Iron Age (Ph 5+6)	10YR7/2 light grey; well sorted slightly silty fine sand; massive; conspicuous near vertical root channels with humic coating and common root remains; no acid reaction.

Table 2: Lithostratigraphic sequence from column sample <TWG00 22A>

Depth (m)	Unit number	Context number	Preliminary date	Description
0.00 to 0.40 (0.85-0.45mOD)	1	492, 603, 584	LIA (Ph 6) IA (Ph 5) Neo/BA (Ph 3)	10YR 5/2 greyish brown; poorly sorted sandy clayey silt with flint granules and clasts of sub-angular and well-rounded flint (up to 10mm); massive; root channels with Fe-enriched margins and scattered root remains; scattered plant debris; piece of partially mineralised (Fe) wood (30x12mm); charcoal; no acid reaction.

Table 3: Lithostratigraphic sequence from column sample <TWG00 22B>

TBA03: Column Samples <TBA03 13 2> and <TBA03 13 1>; Building 5, Section 18

At the base of the sequence, Units 1 and 2 of sample <TBA03 13 2> forming respectively contexts (1078) and (1077) represent the infill of a linear prehistoric drainage ditch [1079]. Infrequent and small pieces of charcoal were observed in both units and burnt and struck flint were recorded in context (1077) in the field. Root penetration may represent evidence of soil-forming processes, possibly relating to the lower part of the buried soil recorded elsewhere in Building 5 as context (984) in which pottery and struck flint are present (Table 4; Figure 2). The overlapping sample <TBA03 13 1> passes up from Unit 1 - the ditch fill (1077) into the slightly gravelly clayey silty sands of Units 2 and 3 (Table 5; Figure 2). The lower part of this sequence (Unit 2) contains traces of a well-developed root network which may relate to the buried soil mentioned above. However Unit 3 context (1083), which also contains a well-developed root network, includes a more substantial amount of anthropogenic material in the form of charcoal, particles of coal and chips of bone. This material is likely to be of post-medieval origin and it is difficult to know whether the soil development in these sediments is of prehistoric age or post-medieval, or both. However it has been phased as Roman. The low organic matter values throughout the sequence support the descriptions and interpretation above (Table 6; Figure 3).

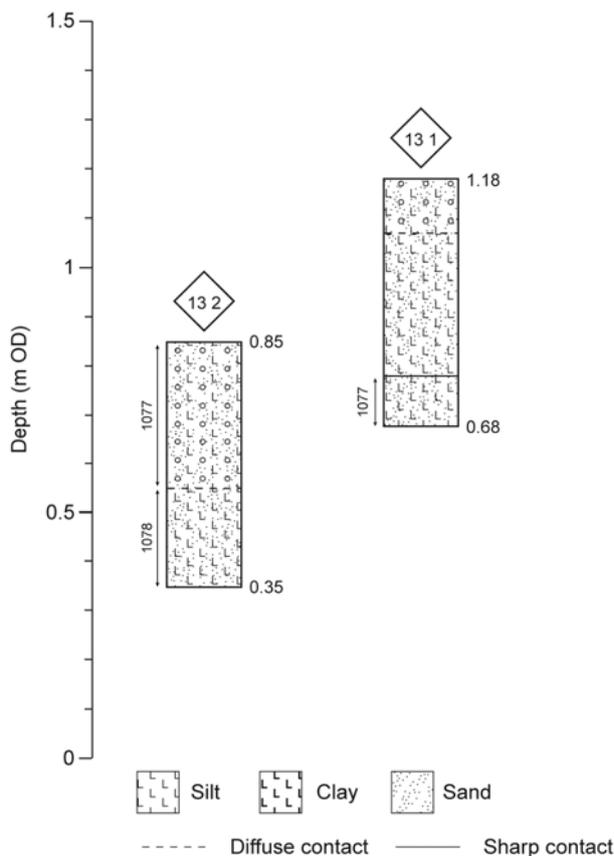


Figure 2: Lithostratigraphy of column samples <TBA03 13 2> and <TBA03 13 1>

Depth (m OD)	Unit number	Context number	Preliminary date	Description
0.85 to 0.55	2	(1077)	Bronze Age/ Iron Age (Ph 4)	10YR6/4 light yellowish brown; well sorted slightly silty medium to coarse sand with flint granules and fine gravel (up to 12mm); massive; root channels with rust coloured iron-rich margins; seed; infrequent and small charcoal; no acid reaction
0.55 to 0.35	1	(1078)	Bronze Age/ Iron Age (Ph 4)	10YR7/3 very pale brown; well sorted slightly silty fine to medium sand with flint granules; massive; root channels with rust-coloured iron-rich margins; piece of mineralised wood (Fe); very infrequent and small charcoal; no acid reaction; well-marked transition to:

Table 4: Lithostratigraphic sequence from column sample <TBA03 13 2>

Depth (m OD)	Unit number	Context number	Preliminary date	Description
1.18 to 1.07	3	(1083)	Roman (Ph 7)	10YR6/2 light brownish grey; moderately sorted slightly silty medium to coarse sand with flint granules and fine gravel (up to 12mm); massive; common root channels with well developed iron-rich rust coloured botryoidal coatings; probable faunal burrows infilled with clayey sand; charcoal, bone chips; coal; moderate acid reaction
1.07 to 0.78	2	(984)	Iron Age (Ph 5)	10YR5/3 brown and 5YR5/8 yellowish red; moderately sorted slightly silty fine to medium sand with flint granules and a few flint pebbles (up to 20mm); massive; many root channels with strongly developed rust coloured iron-rich margins; infrequent and small charcoal; moderate acid reaction; gradual transition to:
0.78 to 0.68	1	(1077)	Bronze Age/ Iron Age (Ph 4)	10YR6/4 light yellowish brown; moderately sorted slightly silty fine to medium sand with flint granules; massive; root channels with rust coloured iron-rich margins; very infrequent plant remains; infrequent and small charcoal; no acid reaction; well marked transition to:

Table 5: Lithostratigraphic sequence from column sample <TBA03 13 1>

Column Sample	Depth (m OD)		Context number	Preliminary date	Organic matter (%)
13 2	0.35	0.36	(1078)	BA/IA	1.36
	0.45	0.46	(1078)	BA/IA	1.04
	0.55	0.56	(1077)	BA/IA	1.35
	0.65	0.66	(1077)	BA/IA	2.14
13 1	0.75	0.76	(1077)	BA/IA	1.53
	0.85	0.86	(984)	Iron Age	1.65
	0.95	0.96	(984)	Iron Age	1.94
	1.05	1.06	(984)	Iron Age	2.83
	1.15	1.16	(1083)	Roman	2.48

Table 6: Organic matter content of column samples <TBA03 13 2> and <TBA03 13 1>

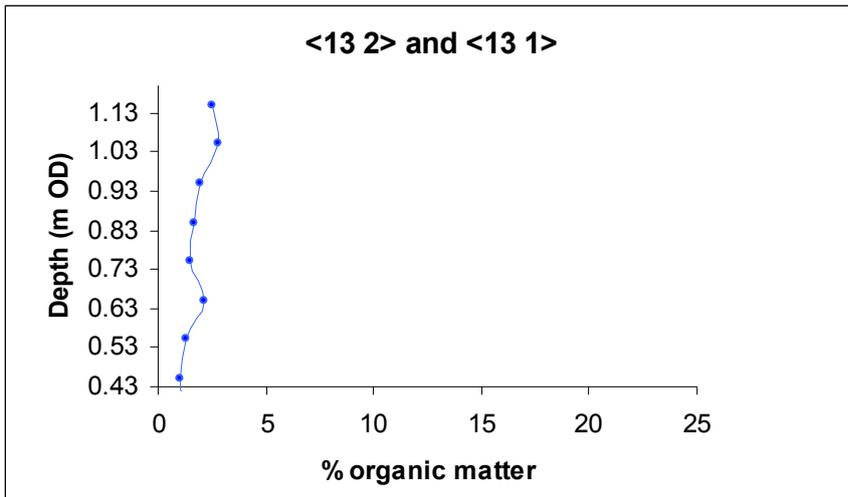


Figure 3: Organic matter determinations from column samples <TBA03 13 2> and <TBA03 13 1>

TBA03: Column samples <TBA03 11B> and <TBA03 11A>; Section 17, Building 5?

These samples represent the infill of three successive post-medieval drainage ditches. The infill of the earliest ditch is clayey silty sand without any visible anthropogenic or organic content (Tables 7 and 8; Figure 5). The infill of the two later ditches is much more organic with large wood fragments in the second ditch and a well-humified wood peat (organic matter content *ca.* 22%; Table 9; Figure 6) forming a thin layer in the bottom of the third and latest ditch, overlain by organic sand and clay.

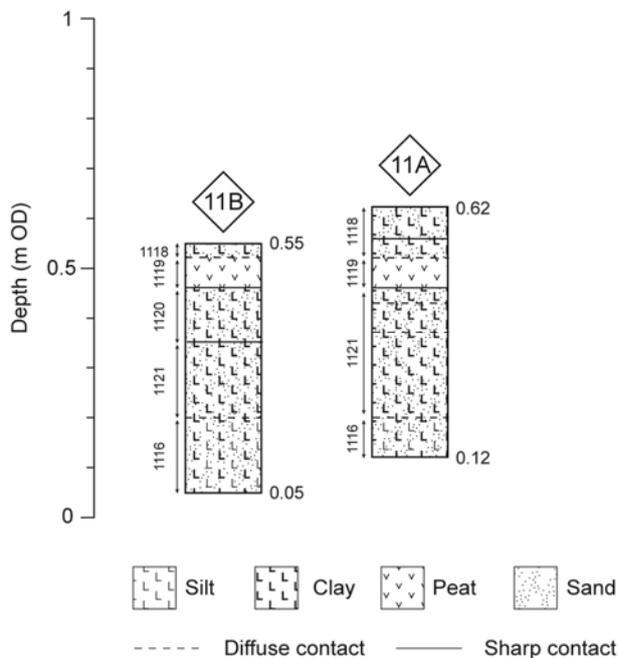


Figure 4: Lithostratigraphy of column samples <TBA03 11B> and <TBA03 11A>

Depth (m OD)	Unit number	Context number	Preliminary date	Description
0.55 to 0.52	5	(1118)	15 th -16 th C	2.5Y 3/1 very dark grey; organic clay and sand (Ga1 As3); diffuse contact
0.52 to 0.46	4	(1119)	15 th -16 th C	10YR 2/1 black; humified wood peat (Tl44; humo4); sharp contact
0.46 to 0.35	3	(1120)	15 th -16 th C	10YR 3/3 dark brown; sandy clay (Ga2 As2); large wood fragments and organic detritus; sharp contact
0.35 to 0.20	2	(1121)	15 th -16 th C	10YR 3/3 dark brown; sandy clay (Ga2 As2); large wood fragments and organic detritus; diffuse contact
0.20 to 0.05	1	(1116)	15 th -16 th C	2.5YR 6/3 light yellowish brown; clayey silty sand (As1 Ag1 Ga2); sharp contact

Table 7: Lithostratigraphic sequence from column sample <TBA03 11B>

Depth (m OD)	Unit number	Context number	Preliminary date	Description
0.62 to 0.56	7	(1118)	15 th -16 th C	10YR 3/1 very dark grey; organic clay with sand (As2 Ga2); wood and shell fragments
0.56 to 0.52	6	(1118)	15 th -16 th C	2.5Y 3/1 very dark grey; organic clay and sand (Ga1 As3); diffuse contact
0.52 to 0.46	5	(1119)	15 th -16 th C	10YR 2/1 black; humified wood peat (Tl44; humo4); sharp contact
0.46 to 0.43	4	(1121)	15 th -16 th C	10YR 4/3 brown; organic clay with sand (As2 Ga2); Large wood fragment; diffuse contact
0.43 to 0.37	3	(1121)	15 th -16 th C	10YR 3/3 dark brown; organic clay with sand (As3 Ga1); wood fragments; diffuse contact
0.37 to 0.20	2	(1121)	15 th -16 th C	10YR 3/3 dark brown; sandy clay (Ga2 As2); large wood fragments and organic detritus; diffuse contact
0.20 to 0.12	1	(1116)	15 th -16 th C	2.5YR 6/3 light yellowish brown; clayey silty sand (As1 Ag1 Ga2); sharp contact

Table 8: Lithostratigraphic sequence from column sample <TBA03 11A>

Column Sample	Depth (m OD)		Context number	Preliminary date	Organic matter (%)
11B	0.05	0.06	(1116)	15 th -16 th C	2.25
	0.09	0.10	(1116)	15 th -16 th C	2.41
11A	0.14	0.15	(1116)	15 th -16 th C	1.42
	0.19	0.20	(1116)	15 th -16 th C	3.03
	0.24	0.25	(1121)	15 th -16 th C	4.64
	0.29	0.30	(1121)	15 th -16 th C	6.83
	0.34	0.35	(1121)	15 th -16 th C	7.83
	0.39	0.40	(1121)	15 th -16 th C	8.10
	0.44	0.45	(1121)	15 th -16 th C	21.92
	0.49	0.50	(1119)	15 th -16 th C	19.16
	0.54	0.55	(1118)	15 th -16 th C	8.08

Table 9: Organic matter content of column samples <TBA03 11B> and <TBA03 11A>

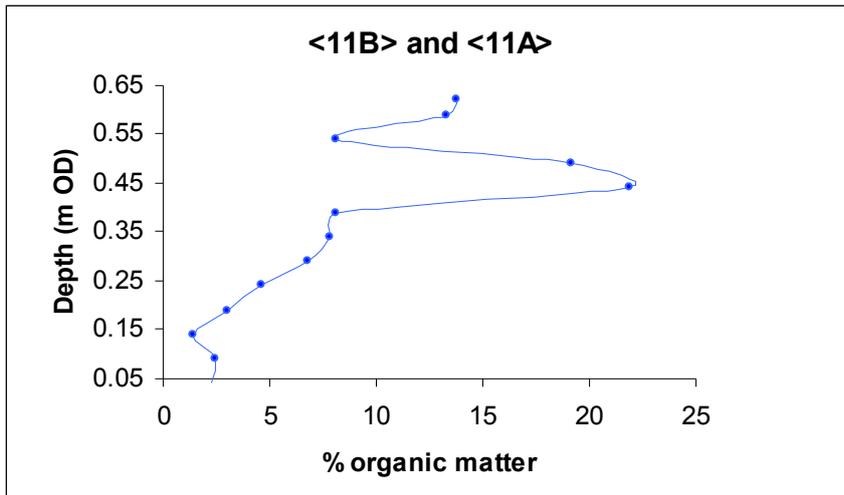


Figure 5: Organic matter determinations from column samples <TBA03 11B> and <TBA03 11A>

TBA03: Column samples <TBA03 12B> and <TBA03 12A>; Section 13, Building 5

At the base of sample <TBA03 12B>, Unit 1, context (1060), represents the Roman alluvium recognised in the upper part of sample <TBA03 13 1>, context (1083). The overlying sandy organic clay of Unit 2, context (1061), contains charcoal and forms part of the post-medieval sequence generally present within Building 5. The whole of sample <TBA03 12A> is in post-medieval material (Tables 10 and 11; Figure 6). The organic matter values did not exceed ca. 10% throughout the sequence (Table 12; Figure 7).

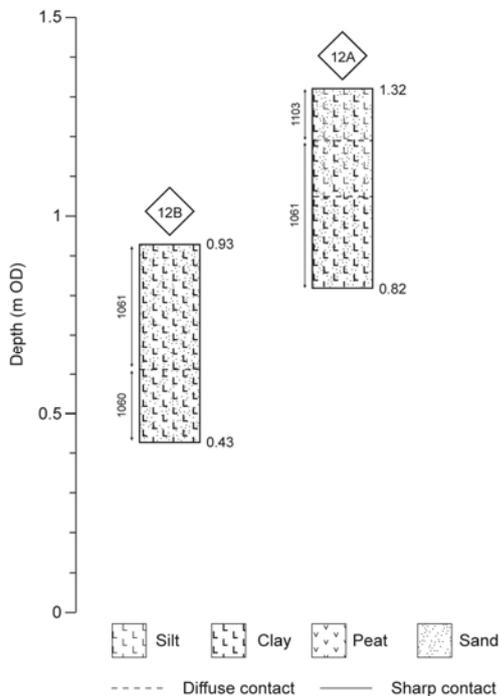


Figure 6: Lithostratigraphy of column samples <TBA03 12B> and <TBA03 12A>

Depth (m OD)	Unit number	Context number	Preliminary date	Description
0.93 to 0.61	2	(1061)	17 th -18 th C	10YR 4/2 dark greyish brown; organic clay with sand (As3 Ga1); diffuse contact
0.61 to 0.43	1	(1060)	Roman	10YR 6/3 pale brown; clayey sand with some small gravels (As1 Ga3 Gg+); diffuse contact

Table 10: Lithostratigraphic sequence from column sample <TBA03 12B>

Depth (m OD)	Unit number	Context number	Preliminary date	Description
1.32 to 1.19	3	(1103)	17 th -18 th C	10 YR 5/2 greyish brown organic sandy silty clay (As2 Ag1 Ga1)
1.19 to 1.05	2	(1061)	17 th -18 th C	10YR 4/1 dark grey, organic sandy silty clay (As2 Ag1 Ga1); charcoal, wood and shell fragments; diffuse contact
1.05 to 0.82	1	(1061)	17 th -18 th C	10YR 4/1 dark grey, organic sandy clay (As3 Ga1); diffuse contact

Table 11: Lithostratigraphic sequence from column sample <TBA03 12A>

Column Sample	Depth (m OD)		Context number	Preliminary date	Organic matter (%)
12B	0.43	0.44	(1060)	Roman	1.46
	0.53	0.54	(1060)	Roman	1.41
	0.63	0.64	(1061)	17 th -18 th C	8.23
	0.73	0.74	(1061)	17 th -18 th C	9.73
	0.83	0.84	(1061)	17 th -18 th C	7.07
12A	0.93	0.94	(1061)	17 th -18 th C	4.56
	1.03	1.04	(1061)	17 th -18 th C	5.35
	1.13	1.14	(1061)	17 th -18 th C	6.04
	1.23	1.24	(1103)	17 th -18 th C	5.43
	1.31	1.32	(1103)	17 th -18 th C	5.98

Table 12: Organic matter content of column <TBA03 12A> and <TBA03 12B>

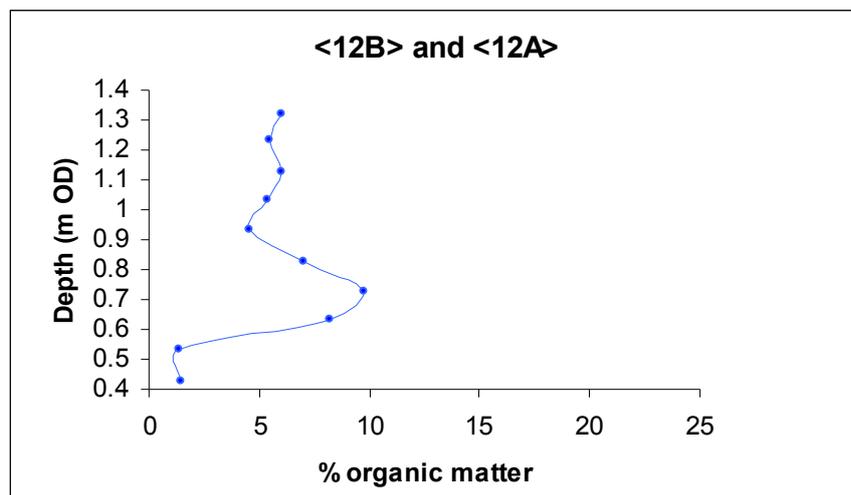


Figure 7: Organic matter determinations from column samples <TBA03 12A> and <TBA03 12B>

RESULTS OF THE RADIOCARBON DATING

The results indicate that peat accumulation occurred between 1030-1260 AD (920-700 cal yr BP) and 1020-1250 AD (920-730 cal yr BP) in column sample <TBA03 11A> (Table 13; see Table 8 for the lithostratigraphic description). $\delta^{13}\text{C}$ (‰) values are entirely consistent with those expected for peat,

and suggest no contamination by either geological or biogenic carbon. The results suggest that peat accumulation occurred during the medieval period. However context [1119] was the fill of a ditch [1012], which was stratigraphically later than ditch [1014], the fill of which [1013] produced pottery dated no earlier than 1480 and CBM dated no earlier than 1450. The material subjected to ¹⁴C dating must therefore have been redeposited from elsewhere. This dating indicates that the environmental material obtained here is subject to residuality and is therefore of little consequence archaeologically.

Laboratory code / method	Material and location	Depth (m OD)	Context number	Uncalibrated radiocarbon years before present (yr BP)	Calibrated age BC (BP) (2-sigma, 95.4% probability)	δ13C (‰)
Waikato 12984 AMS Standard Delivery	Peat <TBA03 11A>	0.46 to 0.49	(1119)	879 ± 40	1030 AD to 1260 AD (920-700 cal BP)	-28.9 ± 0.2
Waikato 12983 AMS Standard Delivery	Peat <TBA03 11A>	0.49 to 0.52	(1119)	887 ± 43	1020 AD to 1250 AD (920-730 cal BP)	-29.9 ± 0.2

Table 13: Results of the radiocarbon dating

RESULTS AND INTERPRETATION OF THE POLLEN ASSESSMENT

Sub-samples were extracted from column samples <TBA03 13 2> and <TBA03 13 1> (Table 14), <TBA03 11B> and <TBA03 11A> (Table 15), and <TBA03 12B> and <TBA03 12A> (Table 16) for assessment of the pollen content. The results of the assessment indicate poor concentration and poor to moderate preservation of pollen grains throughout all column samples.

Column samples <TBA03 13 2> and <TBA03 13 1> (Prehistoric - Roman)

In context (1078), the pollen concentration and preservation was moderate in the sample from 0.35m to 0.36m OD, but absent from 0.45m to 0.46m OD. The only taxa identified were Poaceae (grasses) and *Chenopodium* type (e.g. fat hen), which may indicate that the vegetation was relatively open in character. No pollen was recorded in context (1077). In context (984), pollen concentration and preservation was very poor with no pollen recorded from 0.85m to 0.86m OD, and from 0.95 to 0.96m OD. The only taxa identified from 0.75m to 0.76m OD were Cyperaceae (sedge family) and *Chenopodium* type (e.g. fat hen), which may indicate a relatively open environment. No pollen was recorded in context (1083).

Column samples <TBA03 11B> and <TBA03 11A> (Late medieval – Post Medieval)

No pollen was recorded in context (1116). In context (1121) in the samples from 0.24m to 0.25m OD and 0.34 to 0.35m OD pollen concentration and preservation was poor to moderate, no pollen was preserved in the sample from 0.44m to 0.45m OD. The taxa identified were *Corylus* type (e.g. hazel), Poaceae (grass family) and cf *Calluna vulgaris* (heather) indicating open grassland and shrubland. In context (1119) pollen was recorded in very low concentration and with poor preservation, with the only taxa identified being *Corylus* type (e.g. hazel). In context (1118), pollen was low in concentration and in a moderate state of preservation. The taxa identified were *Corylus* type (e.g. hazel), *Erica* sp (e.g.

cross-leaved heath), Poaceae (grass family) and Cyperaceae (sedge family), indicating open grass and shrub vegetation.

Column samples <TBA03 12B> and <TBA03 12A> (Roman & Post Medieval)

In context (1060), pollen concentration was low and preservation was poor. The main taxa identified were Cyperaceae (sedge family) and *Corylus* type (e.g. hazel) indicating their growth in the vicinity. In context (1061), pollen concentration was low and preservation moderate. The main taxa identified were Poaceae (grass family), Lactuceae (daisy family), and *Corylus* type (e.g. hazel), most likely indicating a relatively open environment supporting the growth of grass and shrub vegetation. In context (1103) pollen was recorded in low concentration and moderate preservation, with the only identified taxa being *Corylus* type (e.g. hazel) and *Erica* sp (e.g. cross-leaved heath).

Depth (m OD) From To		Context number	Preliminary date	Main pollen taxa	Common name	Concentration 0 (none) to 4 (high)	Preservation 0 (none) to 4 (excellent)	Microscopic charred particles 0 (none) to 4 (high)
0.35	0.36	(1078)	BA/IA	<i>Chenopodium</i> type Poaceae	e.g. Fat-hen Grass family	2	2	1
0.45	0.46	(1078)	BA/IA	-	-	0	0	2
0.55	0.56	(1077)	BA/IA	-	-	0	0	1
0.65	0.66	(1077)	BA/IA	-	-	0	0	2
0.75	0.76	(1077)	BA/IA	Cyperaceae <i>Chenopodium</i> type	Sedge family e.g. Fat-hen	1	1	3
0.85	0.86	(984)	IA	-	-	0	0	2
0.95	0.96	(984)	IA	-	-	0	0	1
1.05	1.06	(984)	IA	-	-	0	0	2
1.15	1.16	(1083)	Roman	-	-	0	0	4

Table 14: Pollen-stratigraphic assessment from column samples <TBA03 13 2> and <TBA03 13 1>

Depth (m OD) From To		Context number	Preliminary date	Main pollen taxa	Common name	Concentration 0 (none) to 4 (high)	Preservation 0 (none) to 4 (high)	Microscopic charred particles 0 (none) to 4 (high)
0.05	0.06	(1116)	Post Med	-	-	0	0	2
0.14	0.15	(1116)	Post Med	-	-	0	0	1
0.24	0.25	(1121)	Post Med	<i>Corylus</i> type cf. <i>Calluna vulgaris</i> Poaceae	e.g. Hazel cf. Heather Grass family	2	2	2
0.34	0.35	(1121)	Post Med	Poaceae	Grass family	1	1	1
0.44	0.45	(1121)	Post Med	-	-	0	0	1
0.49	0.50	(1119)	Post Med	<i>Corylus</i> type	e.g. Hazel	1	1	2
0.54	0.55	(1118)	Post Med	Poaceae Cyperaceae <i>Corylus</i> type <i>Erica</i> spp.	Grass family Sedge family e.g. Hazel e.g. Cross-leaved heath	1	2	2

Table 15: Pollen-stratigraphic assessment from column samples <TBA03 11B> and <TBA03 11A>

Depth (m OD) From To		Context number	Preliminary date	Main pollen taxa	Common name	Concentration 0 (none) to 4 (high)	Preservation 0 (none) to 4 (high)	Microscopic charred particles 0 (none) to 4 (high)
0.43	0.44	(1060)	Roman	Cyperaceae <i>Corylus</i> type	Sedge family e.g. Hazel	1	1	3
0.53	0.54	(1060)	Roman	<i>Sphagnum</i> spores	Peat moss	1	1	1
0.63	0.64	(1061)	Post Med	Lactuceae <i>Sphagnum</i> spores	Daisy family Peat moss	1	2	1
0.73	0.74	(1061)	Post Med	Poaceae Lactuceae	Grass family Daisy family	1	2	2
0.83	0.84	(1061)	Post Med	Poaceae Lactuceae	Grass family Daisy family	1	2	2
0.93	0.94	(1061)	Post Med	Poaceae	Grass family	1	1	3
1.03	1.04	(1061)	Post Med	<i>Corylus</i> type Poaceae	e.g. Hazel Grass family	1	2	3
1.13	1.14	(1061)	Post Med	<i>Corylus</i> type	e.g. Hazel	1	2	4
1.23	1.24	(1103)	Post Med	<i>Erica</i> spp.	e.g. Cross-leaved heath	1	2	4
1.31	1.32	(1103)	Post Med	<i>Corylus</i> type	e.g. Hazel	1	2	4

Table 16: Pollen-stratigraphic assessment from column samples <TBA03 12B> and <TBA03 12A>

RESULTS AND INTERPRETATION OF THE DIATOM ASSESSMENT

Sub-samples were extracted from column samples <TBA03 13 2>, <TBA03 13 1>, <TBA03 11B>, <TBA03 11A>, <TBA03 12B> and <TBA03 12A> for assessment of diatoms (Tables 17 to 19).

Diatoms were not present in the sequences from column samples <TBA03 13> or <TBA03 12>.

Fragments of unidentifiable diatoms were preserved in a very poor condition and very low concentration in levels 0.24 to 0.25 (context (1121)), 0.34 to 0.35 (context (1121)) and 0.54 to 0.55m OD (context (1118)) in column samples <TBA03 11A> and <TBA03 11B>. Many factors influence diatom preservation, and it is probable that in the sediments examined here diatom concentrations were always low and that post-depositional destruction of the frustules had occurred due to drying-out, abrasion and possibly unfavourable chemical conditions. Dissolution of the diatom silica, for example, can occur as a response to the ambient dissolved silica concentration, the pH in open water, and the interstitial water in sediments. Using both fossil and modern diatoms, these and other environmental factors have been shown to affect the quality of preservation of assemblages (Flower, 1993; Ryves *et al.*, 2001).

Depth (m OD)		Context number	Preliminary date	Concentration	Preservation	Weight (g)
0.55	0.56	1077	BA/IA	-	-	1.360
0.65	0.66	1077	BA/IA	-	-	1.0739
0.75	0.76	1077	BA/IA	-	-	1.4699
0.85	0.86	984	IA	-	-	1.4237
0.95	0.96	984	IA	-	-	1.7165
1.05	1.06	984	IA	-	-	1.1270

Table 17: Diatom assessment from <TBA03 13 2> and <TBA03 13 1>

Depth (m OD)		Context number	Preliminary date	Concentration	Preservation	Weight (g)
0.24	0.25	1116	Post Med	1	1	1.1890
0.34	0.35	1121	Post Med	1	1	1.2571
0.54	0.55	1121	Post Med	1	1	1.7428

Table 18: Diatom assessment from <TBA03 11B> and <TBA03 11A>

Depth (m OD)		Context number	Preliminary date	Concentration	Preservation	Weight (g)
0.63	0.64	1061	Post Med	-	-	1.4453
0.73	0.74	1061	Post Med	-	-	1.0542
0.83	0.84	1061	Post Med	-	-	1.3387
0.93	0.94	1061	Post Med	-	-	1.1747
1.03	1.04	1061	Post Med	-	-	1.1462
1.13	1.14	1061	Post Med	-	-	1.0443

Table 19: Diatom assessment from <TBA03 12B> and <TBA03 12A>

Key: Concentration: - absent; 1= rare; Preservation: - absent; 1 = poor

RESULTS AND INTERPRETATION OF THE PLANT MACROFOSSIL ASSESSMENT

A total of 47 bulk samples (19 samples from TWG00, 9 samples from TBA03 and 19 samples from TBB03) were processed for the plant macrofossil assessment. The detailed results are displayed in

Tables 20, 21 and 22. The bulk samples were taken from a range of feature types, such as pits, ditches, occupation layers and cuts. Most samples have been phased as prehistoric or post-medieval.

TWG00: Prehistoric (Table 20)

Most of the plant macrofossils in these samples were un-charred, probably preserved by waterlogging. None of the four samples assessed for this period were very productive. Indeterminate vegetative fragments dominated samples <16> and <20>. Where seeds were present they were of the more robust type with 'woody' testas such as sedge (*Carex* sp.) and wild celery (*Aethusa* sp.). The well fill (context (585)), sample <16>, was the most productive sample, dominated by fragments of stem/leaf, wood fragments and twigs. Approximately twenty seeds of wild celery were recorded. The fill of ardmarks [590] (sample <19>) produced little other than microscopic vegetative fragments.

TWG00: Post Medieval (Table 20)

The main form of preservation for plant remains in samples from this phase was waterlogging and more occasionally mineralisation. These forms of preservation and the type of plant remains recovered seem to reflect the deposition of cess in several of the features sampled. The most productive archaeobotanical assemblages came from samples from three of the tanning pits (samples <3>, <5>, <6>) and feature [376] (sample <7>). These samples contained many fruit seeds that included those of elderberry (*Sambucus nigra* L.), blackberry (*Rubus fruticosus* L.) and grape (*Vitis vinifera* L.). Sample <6> was the sample containing occasional mineralised fruit seeds. Mineralisation also preserved a grape seed in sample <13> from ditch [400]. A similar sample, <11>, from dump make up levelling (462), contained abundant fruit seeds and seeds of water and damp ground such as fat hen (*Chenopodium album* L) and celery-leaved buttercup (*Ranunculus sceleratus* L). The ditch samples (<12> from [486] and <9> from [458]) produced smaller assemblages containing seeds of ruderals; some from plants of damp ground such as water-dropwort (*Oenanthe* sp.). Sample <9> also produced one barley (*Hordeum* sp.) grain. Occasional finds of one or two charred grains were rare in these samples. Sample <14> from E-W linear drainage slot also produced one barley grain. The remaining samples produced small or unproductive assemblages. A sample from clinker layer (context (433)) (sample <8>) and primary fill of tanning pit (context (327)) (sample <1>) produced very little other than root/rhizome fragments. In the case of the latter, the white, possibly lime, matrix and absence of a cess-like fill seems to indicate that the pit was cleaned prior to use or re-use. The fills of timber lined cut [386] (sample <15>) and clay tobacco pipe waste pit [329] (sample <4>) produced similarly scarce botanical remains comprising of fragments of moss and root/rhizomes. Occasional finds of fruit seeds preserved by waterlogging and charred fruit stone fragments or grains in samples <2>, <10>, <13> and <14> suggest that these pit, ditch and drainage slot features were backfilled with debris from the surrounding area.

TBA03: Prehistoric (Table 21)

Tree throw fill (context (1096)) (sample <8>) and reworked natural sands (context (1090)) (sample <9>) produced very little other than stem/leaf fragments and occasional ruderal seeds such as those of stinging nettle (*Urtica dioica* L.) and dead-nettle (*Lamium* sp.). The primary fill of ditch cut [1079] (sample <6>) was far more productive and produced an abundant and diverse waterlogged seed assemblage dominated by fruit seeds (i.e. elderberry and blackberry) and seeds from plants of damp ground such as gypsywort (*Lycopus europaeus* L.) and water-plantain (*Alisma* sp.). Seeds of wild parsnip (*Pastinaca* sp.) were also recovered. These and the seeds of water-plantain are quite fragile so it is likely that preservation conditions for plant remains in this feature were good.

TBA03: Roman (Table 21)

The sample from linear cut [1081] (sample <7>) produced a moderately abundant but species poor assemblage of seeds of elderberry and buttercup (*Ranunculus acris/repens/bulbosus*). The most abundant plant macrofossils were indeterminate stem/leaf fragments. These plant macrofossils were un-charred, possibly preserved by waterlogging.

TBA03: Post Medieval (Table 21)

The most productive samples in this phase were from tanning pit [1046] (sample <5>), wattle lined pit fill (context (1000)) (sample <1>) and pit fill (context (1102)) (sample <10>). Sample <5> produced a moderately abundant assemblage of fruit and ruderal seeds similar to those in samples <1> and <10>. In each sample, elderberry seeds were present, along with other fruit seeds such as grape or ruderals such as knotgrass (*Polygonum aviculare* L.) or sedge. The remaining samples were less productive. The fill of linear slot [1050] (sample <3>) produced only a low number of fig (*Ficus carica* L.) seeds. The fill of ditch [1010] (sample <4>) was dominated by root/rhizome fragments and contained occasional elderberry and violet (*Viola* sp.) seeds.

TBB03: Post Medieval (Table 22)

The most productive samples were the fill of a brick lined cesspit (context (1692)) sample <50> and a fill (context (1899)) of a linear slot (sample <65>). Sample <50> produced abundant fruit seeds (i.e. elderberry, blackberry and grape) preserved by waterlogging and sample <65> produced an assemblage dominated by weed seeds such as orache (*Atriplex* sp.) and knotgrass-type (*Polygonum* sp.). There does not appear to be a pattern to the content and levels of abundance of the remaining samples. Moderately diverse and abundant assemblages of waterlogged plant remains were observed in ditch cut [1826] (sample <62>), linear slot [1850]=[1866] (sample <58>) and sandy silt layer [1861] and [1860] (sample <56>). Each of these contained seeds of edible fruits and weed seeds already seen in samples from sites TBA03 and TWG00. TBB03 samples do seem to contain more charred macrofossils. At this stage it cannot be clear whether this was due to differential preservation or human activity. Sample <62> also contained a small charred assemblage of barley and wheat (*Triticum* sp.) grains, a possible corncockle (*Agrostemma githago* L.) seed and grass stem fragments. The sample from working surface [1839] and [1841] (sample <52>) produced a charred assemblage

unusual for these sites in its abundance and diversity. Approximately thirty well-preserved barley grains were observed, along with seeds of brome (*Bromus* sp.), bedstraw (*Galium* sp.), possible pea (cf. *Pisum sativum* L.) and fragments of fruit stone and hazelnut (*Corylus avellana* L.) shell. Another unusual find, for this site, was a possible mineralised allspice (*Pimenta dioica* L.) in slot fill (context 1854) (sample <64>). This sample produced very little else botanically. The remaining samples were also relatively unproductive. Some samples, such as sample <1> (context (1475)) were botanically poor but contained abundant Mollusca. Others, such as samples <55> [1826] and <60> (slot [1870]) produced very low numbers of un-charred, possibly waterlogged weed or fruit seeds and charred grain, seeds or stem.

Quality of and type of preservation

The quality of preservation was moderate to good in most of the samples. Most of the plant remains were preserved by waterlogging or, more rarely, mineralisation. Both types of preservation are common in urban refuse deposits. Stratigraphic movement by bioturbation (from roots or borrowing fauna) does not appear to be a major problem in these samples because root/rhizome fragments were an uncommon find and the burrowing snail *Ceciliodes* was not observed among the molluscs. Faunal analysis may clarify this. Preservation by waterlogging occurs when plant remains are in anoxic conditions such as sealed pits or layers or a high water table (Jones, 2002). Waterlogging seems to be the most frequent type of preservation in samples from all three sites. The features containing most waterlogged remains are those with large fruit seed assemblages such as the post-medieval tanning pit fills from TWG00. In samples where un-charred 'woody' seeds, such as those of elderberry, blackberry/raspberry, grape and celery-leaved buttercup are present where more delicate seeds are not, differential preservation needs to be considered. Botanical assemblages containing only 'woody' seeds can be the result of differential preservation caused by a fluctuating water table (Green, 1982). This appears to be the case with prehistoric and Roman samples for sites TWG00 and TBA03.

Preservation by mineralisation was scarce and occurred in sample <6> from a tanning pit fill and sample <13> ditch fill (context (478)), both from TWG00, as well as a post-medieval slot fill (context (1854)) (sample <64>) from TBB03. Mineralisation can occur when organic remains are exposed to calcium-rich groundwater, lime, human/mammal faecal material or fish bone and scales (Green, 1979). In these conditions the organic compounds in plant macro-remains are replaced by calcium phosphate. Remains preserved in this way tend to be harder to identify because many of the detailed identification criteria are destroyed by the mineralisation process. Preservation by charring was present but rarer. Charring occurs when plant remains are burned in reducing conditions where oxygen has been excluded (Jones, 2002, 12).

Feature	Context number	Sample number	Flot volume (ml)	Waterlogged										Mineralised			Charred									Main taxa					
				Seeds			Wood		Roots		Moss		Stem /leaf			Seeds			Seeds			Grain			Chaff			Other			
				a	d	p	a	p	a	p	a	p	a	p	a	d	p	a	d	p	a	d	p	a	d		p	a	d	p	
Prehistoric																															
Fill of possible well	(585)	<16>	200	2	1	3	3	1	-	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	mostly waterlogged indeterminate vegetative fragments and twig fragments, also present sere occasional fragments of bark and seeds of wild plants- dominated by AET
Fill of ard marks [590]	(589)	<19>	5	-	-	-	-	-	1	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	very little other than microscopic vegetative fragments
Fill of small ovoid pit possible fire pit	(611)	<17>	10	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	very little, occasional CAR seeds	
Buried soil horizon	(650)	<20>	10	-	-	-	2	1	-	-	1	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mostly stem/leaf fragments	
Post Medieval																															
Primary fill of tanning pit	(327)	<1>	10	-	-	-	-	-	2	1	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	very little, just root/rhizome/stem fragments in white (lime?) matrix	
Fill of tanning pit	(371)	<6>	75	3	2	3	-	-	3	1	1	2	-	-	1	1	3	-	-	-	-	-	-	-	-	-	-	-	-	abundant fruit seeds (including SAMNI, RUBFR, FICCA, VITVI) , mostly waterlogged, occasionally mineralised	

Fill of drainage ditch [468] & [400]	(485)	<12>	20	2	2	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mostly waterlogged seeds, including OEN, occasional poorly preserved uncharred wood
Fill of drainage ditch [358]	(463)	<9>	40	2	1	3	-	-	-	-	-	3	1	-	-	-	-	-	-	1	1	3	-	-	-	-	-	mostly stemleaf fragments and moderate quantities of fruit and ruderal seeds, also containing 1 HOR grain
Fill of E-W linear drainage slot	(556)	<14>	10	1	1	3	1	1	-	-	1	3	-	-	-	-	-	-	-	1	1	3	-	-	-	-	-	very little, occasional RAN and CAR seeds, 1 charred HOR grain
Fill of drainage slot [465]	(464)	<10>	60	1	1	3	-	-	1	3	1	3	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	very little - occasional fruit seeds including SAMNI, RUBFR, and FICCA
Dump make up levelling	(462)	<11>	40	3	2	1	-	-	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mostly waterlogged seeds dominated by those of fruits such as SAMNI, RUBFR, also weed seeds such as CHE and RANSC
Fill of [386] possibly timber lined cut	(388)	<15>	30	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	very little, just fragments of moss and root/rhizomes

Key: Abundance: 1= low/occasional 1-10, 2=moderate 11-100, 3=abundant/high >100; Diversity: 1= low 1-4, 2=intermediate/moderate 5-10, 3=high >11; Preservation: 1 = poor, 2 = moderate, 3 = good

Plant codes: ATR = *Atriplex* sp. (orache); BET = *Betula* sp. (birch); BRO = *Bromus* sp. (brome); CAR = *Carex* sp. (sedge); CHE = *Chenopodium* sp. (goosefoot type); CHEAL = *Chenopodium album* L. (fat hen); CORAV = *Corylus avellana* L (hazel); FICCA = *Ficus carica* L. (fig); GAL = *Galium* sp. (bedstraw); HOR = *Hordeum* sp. (barley); JUN = *Juncus* sp. (rush); LAM = *Lamium* sp. (dead nettle); LYCEU = *Lycopus europaeus* L. (gypsywort); PIMDI = *Pimenta dioica* L (allspice); PISSA = *Pisum sativum* L. (pea); POL = *Polygonum* sp. (knotgrass type); RESLU = *Reseda luteola* L. (weld); RUBFR = *Rubus fruticosus* L. (blackberry); SAMNI = *Sambucus nigra* L. (elder); SCHLA = *Schoenoplectus laustris* (L.) Palla (common club-rush); TRI = *Triticum* sp (wheat); URTDI = *Urtica dioica* L. (stinging nettle); VICFA = *Vicia faba* L. (Celtic/horsebean)

Table 20: Plant macrofossil assessment (Site Code: TWG00)

Feature	Context number	Sample number	Flot volume (ml)	Waterlogged										Mineralised			Charred									Main taxa				
				Seeds			Wood		Roots		Moss		Stem /leaf		Seeds			Seeds			Grain			Chaff			Other			
				a	d	p	a	p	a	p	a	p	a	p	a	d	p	a	d	p	a	d	p	a	d		p	a	d	p
Prehistoric																														
Primary fill of ditch cut [1079]	(1078)	<6>	100	3	3	3	3	1	-	-	-	-	3	1	-	-	-	-	-	-	1	1	3	-	-	-	-	-	-	mostly waterlogged stem/leaf, wood fragments and seeds - good seed assemblage including many fruit seeds (i.e. SAMNI, RUBFR) and ruderals (i.e., LYCEU, ALI, PASSA); one charred ?TRIDI grain
Fill of probable tree throw	(1096)	<8>	5	1	1	3	-	-	-	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mostly stem/leaf fragments, occasional ruderal seeds including URTDI
Reworked natural sands	(1090)	<9>	5	1	1	3	1	1	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mostly stem/leaf fragments, occasional ruderal seeds including LAM
Roman																														
Fill of linear cut [1081]	(1082)	<7>	5	2	1	3	-	-	-	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mostly stem/leaf fragments, moderate numbers of fruit and ruderal seeds such as SAMNI and RAN
Post Medieval																														
Backfill of tanning pit [1046]	(1044)	<5>	10	2	1	3	-	-	2	1	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mostly stem/leaf fragments, moderate quantities of fruit and weed seeds such as SAMNI , LYCEU and AET
Fill of wattle lined pit	(1000)	<1>	10	2	2	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	moderate waterlogged assemblage of seeds including those of RUBFR, SAMNI and POLAV

Feature	Context number	Sample number	Flot volume (ml)	Waterlogged									Mineralised			Charred									Main taxa					
				Seeds			Wood		Roots		Moss		Stem /leaf		Seeds			Seeds			Grain			Chaff			Other			
				a	d	p	a	p	a	p	a	p	a	p	a	d	p	a	d	p	a	d	p	a		d	p	a	d	p
Fill of beam slot [1476]	(1475)	<1>	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	virtually nothing, just charcoal flecks, flot dominated by mollusca	
Industrial Fill Of Industrial Cut [1478]	(1477)	<2>	15	1	1	3	-	-	-	-	-	-	-	-	-	-	1	1	3	-	-	-	-	1	1	3	-	-	small assemblage of waterlogged weed seeds (including RESLU and CHEAL) and charred chaff (culm node, stem fragments)	
Lime-Lining Of Lime Lined Cut [1474]	(1473)	<3>	5	-	-	-	-	-	-	-	1	1	1	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	very little, just occasional fragments of uncharred moss and stem/leaf fragments and 2 charred SAMNI seeds	
Primary Fill Of N-S Ditch Cut Runs Across Previous Excavated Areas [1826]	(1825)	<62>	95	2	2	3	-	-	-	-	-	-	-	-	-	-	1	1	2	1	1	3	1	1	-	1	1	1	mostly waterlogged (including a diverse assemblage of seeds e.g. LYCEU JUN RUBFR), small charred assemblage including 2TRI and 3HOR grains, seeds - legume ?AGRGI and stem fragments	
Fill Of Linear Ditch	(1919)	<66>	5	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	very little, occasional seeds - including SAMNI and LAM	
Top Fill Of N-S Ditch Cut [1826]	(1823)	<55>	25	1	1	3	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	very little, occasional fruit seeds (i.e. RUBFR) and 1 TRI grain	
Humic Fill Of Ovoid Brick Lined Cess Pit	(1692)	<50>	45	3	2	3	-	-	-	-	-	-	-	-	-	-	-	-	1	1	3	-	-	-	-	-	-	abundant waterlogged fruit seeds (i.e. SAMNI,RUBFR,VITVI), also ruderals, 2 charred free-threshing type TRI grains		

Whitish grey sandy silt working surface = [1839] and [1841]	(1838)	<52>	90	1	1	3	-	-	-	-	-	-	-	-	-	-	2	1	3	2	1	3	-	-	-	1	1	3	very good charred assemblage - including c30 HOR grains, very good preservation, seeds include GAL, BRO, cf. PISSA, occasional fruit stone and CORAV shell fragments, large VIFCA sized legume and larger indet. object, (half sphere, large legume? occasional stem fragments
Bony [sic?] sandy silt occupation layer	(1837)	<51>	10	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	very little, possible waterlogged grass seed
Fill of slot [1902]	(1899)	<65>	60	3	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	mostly waterlogged ruderal seeds including ATR, POL and LAM, one charred TRI grain

Key: Abundance: 1=low/occasional 1-10, 2=moderate 11-100, 3=abundant/high >100; Diversity: 1=low 1-4, 2=intermediate/moderate 5-10, 3=high >11; Preservation: 1 = poor, 2 = moderate, 3 = good

Plant codes: ATR = *Atriplex* sp. (orache); BET = *Betula* sp. (birch); BRO = *Bromus* sp. (brome); CAR = *Carex* sp. (sedge); CHE = *Chenopodium* sp. (goosefoot type); CHEAL = *Chenopodium album* L. (fat hen); CORAV = *Corylus avellana* L (hazel); FICCA = *Ficus carica* L. (fig); GAL = *Galium* sp. (bedstraw); HOR = *Hordeum* sp. (barley); JUN = *Juncus* sp. (rush); LAM = *Lamium* sp. (dead nettle); LYCEU = *Lycopus europaeus* L. (gypsywort); PIMDI = *Pimenta dioica* L (allspice); PISSA = *Pisum sativum* L. (pea); POL = *Polygonum* sp. (knotgrass type); RESLU = *Reseda luteola* L. (weld); RUBFR = *Rubus fruticosus* L. (blackberry); SAMNI = *Sambucus nigra* L. (elder); SCHLA = *Schoenoplectus laustris* (L.) Palla (common club-rush); TRI = *Triticum* sp (wheat); URTDI = *Urtica dioica* L. (stinging nettle); VICFA = *Vicia faba* L. (Celtic/horsebean)

Table 22: Plant macrofossil assessment, 169 Tower Bridge Road, London Borough of Southwark (Site Code: TBB03)

RESULTS AND INTERPRETATION OF THE CHARCOAL ASSESSMENT

Each of the 47 bulk samples assessed for plant macrofossil assessments were examined for their potential to provide identifiable charcoal. The results are displayed in detail in Table 23. Identifications here are prefaced '?' or 'cf' because, for this assessment, they were made from the transverse sections not all three sections as would be normal in a charcoal analysis.

TWG00: Prehistoric

No identifiable charcoal was present in samples <19> or <20>. Samples <16> and <17> produced low quantities of well-preserved charcoal dominated by ?Betulaceae

TWG00: Post Medieval

No identifiable charcoal was present samples in <1>, <2>, <3>, <4> or <15>. The best preserved fragments of charcoal were recovered from samples <6>, <8>, <9>, <10>, <11>, <12>, <13>, <14>. The most diverse was sample <12>. Moderate diversity was observed in samples <7>, <8>, <9>, <10>, <11>, <13>, <14>, and <15>. Most of the samples contained hardwood, such as ?elm (cf. *Ulmus* sp.), ?oak (cf. *Quercus* sp.) and Betulaceae but samples <12>, <13> and <15> contained possible fragments of softwood.

TBA03: Prehistoric

No identifiable charcoal was present in sample <9>. Samples <6> and <8> produced low quantities of charcoal dominated by Betulaceae.

TBA03: Roman

No identifiable charcoal fragments were present in sample <7> context (1082).

TBA03: Post Medieval

No identifiable charcoal was present in samples <3> and <4>. The most well-preserved charcoal was observed in samples <1> and <10>. These samples were also the most diverse. Most of the charcoal was hardwood, such as ?elm (cf. *Ulmus* sp.), ?oak (cf. *Quercus* sp.) and Betulaceae but samples <5> and <10> contained a low number of fragments resembling softwood.

TBB03: Post Medieval

No identifiable charcoal was present in samples <2>, <3>, <50>, <54>, <55> or <56>. The best preserved charcoal was observed in samples <1>, <51>, <52>, <53>, <58>, <59>, <60>, <61>, <62>, <63>, <64> and <66>. The most diverse samples were <1>, <52>, <58>, <60>, <62>, <63> and <65>. As with the previous two sites, hardwood fragments such as ?elm (cf. *Ulmus* sp.), ?oak (cf. *Quercus* sp.) and Betulaceae seemed to dominate the samples. Softwood was observed in samples <1>, <52>, <53>, <58> and <62>.

Site Code	Context number	Sample number	Phase	Description	Charcoal			Main taxa
					Concentration	Diversity	Preservation	
TWG00	(585)	<16>*	Prehistoric	Fill of possible well	1	1	3	8 fragments, all hardwood, 1 taxon - ?Betulaceae type
	(589)	<19>	Prehistoric	Fill of ard marks [590]	-	-	-	fragments too small to identify
	(611)	<17>*	Prehistoric	Fill of small ovoid pit possible fire pit	1	1	3	12 fragments, all hardwood, 1 taxa ? ?Betulaceae type
	(650)	<20>	Prehistoric	Buried soil horizon	-	-	-	fragments too small to identify
	(327)	<1>	Post Med	Primary fill of tanning pit	-	-	-	no charcoal
	(371)	<6>*	Post Med	Fill of tanning pit	1	1	3	1 indeterminate twig, hardwood, 1 taxa ?Betulaceae type
	(356)	<5>	Post Med	Fill of tanning pit	1	1	2	2 fragments, 1 indeterminate and 1 ?Quercus sp.
	(311)	<3>	Post Med	Fill of tanning pit	-	-	-	fragments too small to identify
	(340)	<4>	Post Med	Fill of clay tobacco pipe waste pit [329]	1	1	1	6 fragments, all hardwood, mostly ?Betulaceae type
	(361)	<2>	Post Med	Fill of pit	-	-	-	too poorly preserved to identify
	(374)	<7>	Post Med	Cessy fill of [376]	1	2	2	3 fragments, all hardwood, 2 taxa - mostly ?Betulaceae type
	(433)	<8>*	Post Med	Clinker layer	1		3	2 fragments roundwood, hardwood -? Betulaceae type
	(478)	<13>*	Post Med	Fill of extensive N-S ditch cut recorded as [486] and [468] to south	1	2	3	c8 fragments, 7 hardwood, 1 softwood, 4 taxa, mostly ?Betulaceae type
	(485)	<12>*	Post Med	Fill of drainage ditch [468] & [400]	3	3	3	mostly hardwood - 6 taxa -mostly ?Ulmus sp type and ?Quercus sp

								type, 2 softwood fragments - 1 taxon
	(463)	<9>*	Post Med	Fill of drainage ditch [358]	1	2	3	c7 fragments, all hardwood, 2 taxon, mainly ?Quercus sp. type
	(556)	<14>*	Post Med	Fill of E-W linear drainage slot	2	2	3	>30 fragments, all hardwood, c3 taxa, possible ?Quercus sp. type most frequent
	(464)	<10>*	Post Med	Fill of drainage slot [465]	1	2	3	5 fragments, all hardwood, c2 taxa - including ?Ulmus sp.
	(462)	<11>	Post Med	Dump make up levelling	1	2	3	c5 fragments, all hardwood, c3 taxa, including possible ?Quercus sp. type and ?Betulaceae
	(388)	<15>	Post Med	Fill of [386] possibly timber lined cut	2	2	2	mostly hardwood - c4 taxa -mostly ?Quercus sp type, 3 softwood fragments - 1 taxon, bark fragment
TBA03	(1078)	<6>	Prehistoric	Primary fill of ditch cut [1079]	1	1	2	1 fragment, hardwood - ?Betulaceae type
	(1096)	<8>*	Prehistoric	Fill of probable tree throw	1	1	3	2 fragments, hardwood - ?Betulaceae type
	(1090)	<9>	Prehistoric	Reworked natural sands	-	-	-	fragments too small to identify
	(1082)	<7>	Roman	Fill of linear cut [1081]	-	-	-	fragments too small to identify
	(1044)	<5>	Post Med	Backfill of tanning pit [1046]	1	1	2	2 fragments, 1 softwood, 1 hardwood (? Betulaceae)
	(1000)	<1>*	Post Med	Fill of wattle lined pit	1	2	3	5 fragments, all hardwood, 3 taxa - mostly ?Betulaceae type
	(1102)	<10>*	Post Med	Fill of pit	2	2	3	mostly hardwood - 2 taxa (mostly ring porous), 2 softwood- 1

								taxon
	(1009)	<4>	Post Med	Waterlain fill of ne/sw aligned ditch [1010]	-	-	-	fragments too small to identify
	(1051)	<3>	Post Med	Fill of linear slot [1050]	-	-	-	fragments too small to identify
TBB03	(1475)	<1>*	?	Fill of slot [1476]	2	3	3	c13 fragments, 11 hardwood, 2 ?softwood, 5 taxa - mostly Quercus sp. type
	(1477)	<2>	?	Industrial fill of industrial cut [1478]	-	-	-	fragments too small to identify
	(1473)	<3>	?	Lime-lining of lime lined cut [1474]	-	-	-	fragments too small to identify
	(1825)	<62>*	?	Primary fill of n-s ditch cut runs across previous excavated areas [1826]	2	3	3	mostly hardwood - c7 taxa (mostly ?Quercus sp. type), 1 ?softwood fragment
	(1919)	<66>*	?	Fill of linear ditch	2	2	3	>50 fragments, all hardwood, c4 taxa - including possible? Quercus sp., ? Betulaceae and ?Ulmus sp.
	(1823)	<55>	?	Top fill of n-s ditch cut runs across previous excavated areas [1826]	-	-	-	just microscopic charcoal flecks
	(1692)	<50>	?	Humic fill of ovoid brick lined cess pit	-	-	-	fragments too small to identify
	(1866)	<63>*	?	Primary fill of fill of e-w slot [1850] = [1864]	2	3	3	all hardwood, c5 taxa, mostly ?Quercus type
	(1864)	<58>*	?	Primary fill of linear slot [1850] = [1866]	2	3	3	mostly hardwood, 2 ?softwood, c4 hardwood taxa, c1 softwood taxa, mostly ring porous

	(1877)	<60>*	?	Waterlain fill of linear slot [1870]	2	3	3	c30 fragments, all hardwood, c5 taxa, mostly ? Quercus sp. type and ?Ulmussp. type
	(1874)	<59>*	?	Fill of e-w slot	2	2	3	all hardwood, c2 taxa, mostly ?Betulaceae type
	(1867)	<61>*	?	Waterlain fill of linear slot [1870]	1	1	3	1 fragment, hardwood
	(1854)	<64>*	?	Fill of n-s slot	2	1	3	c12 fragments, all hardwood, 1 taxon - possibly ?Quercus sp.
	(1830)	<53>*	?	Occupation layer	2	2	3	11 fragments, mostly hardwood - 3 taxa (mostly), 2 softwood - c1 taxon ? Betulaceae type
	(1835)	<54>	?	Occupation layer	-	-	-	fragments too small to identify
	(1859)	<56>	?	Sandy silt layer = [1861] and [1860]	1	1	2	6 fragments -all hardwood, c1 taxon - ring porous
	(1838)	<52>*	?	Whitish grey sandy silt working surface = [1839] and [1841]	3	3	3	mostly hardwood - c5 taxa - mostly Quercus sp. type and ?Betulaceae type), 4 softwood fragments - c1 taxon
	(1837)	<51>*	?	Bony sandy silt occupation layer	1	2	3	4 fragments, all hardwood, c2 taxa, 1 fragments of ?Quercus-like roundwood

Key:

Concentration: 1 = 1 to 10 fragments; 2 = 11 to 100 fragments; 3 = >100 fragments

Diversity: 1= low (1); 2=intermediate/moderate (2-4); 3=high (>5)

Preservation: 1 = poor; 2 = moderate; 3 = good

Table 23: Charcoal assessment (All Site Codes)

RESULTS AND INTERPRETATION OF THE MOLLUSCA ASSESSMENT

The results of the Mollusca assessment are presented in Table 24. Twenty three samples were examined, eleven from TWG00, twelve from TBB03 and one from TBA03.

TWG00: Prehistoric

Sample <16> contained only a few, generally poorly preserved shells and shell debris.

TWG00: Post Medieval

Samples <3>, <9>, <14> and <11> contained only a few, generally poorly preserved shells and shell debris. Sample <5>, <6>, <8> and <10> yielded only the remains of edible species (oyster and mussel). Broken mussel shell was also present in sample <11>. Samples <13> and <12> contained diverse and generally well preserved mollusc faunas. In all these samples *Lymnaea* (probably mainly *L. peregra*) appears to be the commonest species, in all cases accompanied by Planorbids. Other taxa represented in the samples include *Bithynia*, *Valvata*, *Succinea* and small bivalves.

TBA03: Post Medieval

The one sample from TBA03, sample <5>, contained only a few, generally poorly preserved shells and shell debris.

TBB03: Post Medieval

Samples <51>, <54>, <55>, <56> and <66> yielded only the remains of edible species (oyster and mussel). Sample <63> contained only a few, generally poorly preserved shells and shell debris. The remaining samples (<1>, <62>, <58>, <60>, <59> and <65>), contained diverse and generally well preserved mollusc faunas. In all these samples *Lymnaea* (probably mainly *L. peregra*) appears to be the commonest species, in all cases accompanied by Planorbids. Other taxa represented in the samples include *Bithynia*, *Valvata*, *Succinea* and small bivalves. The principal species recognised in these samples are tolerant of quite poor conditions and might be found living in weedy and muddy ditches. *Bithynia* and *Valvata* are generally found in larger and more permanent water-bodies.

Site Code	Context Number	Sample number	Phase	Description	Mollusca		Main Taxa
					Concentration	Preservation	
TWG00	(585)	<16>	Prehistoric	Fill of possible well	1	2	single Planorbid
	(371)	<6>	Post Med	Fill of tanning pit	-	-	one whelk
	(365)	<5>	Post Med	Fill of tanning pit	-	-	Two oyster valves and broken oyster shell
	(311)	<3>	Post Med	Fill of tanning pit	1	4	one small conjoined bivalve
	(433)	<8>	Post Med	Clinker layer	-	-	one oyster valve
	(478)	<13>	Post Med	Fill of extensive N-S ditch cut	4	4	Lymnaea, Succinea, Planorbids, Valvata, small bivalves
	(485)	<12>	Post Med	Fill of drainage ditch	4	4	Lymnaea, Succinea, Planorbids, Bithynia, Valvata, small bivalves
	(463)	<9>	Post Med	Fill of drainage ditch	1	1	Lymnaea, Planorbids, Valvata
	(556)	<14>	Post Med	Fill of E-W linear slot	1	1	Lymnaea, Planorbids, Valvata
	(464)	<10>	Post Med	Fill of drainage slot	-	-	one mussel valve, broken mussel shell
	(462)	<11>	Post Med	Dump make up	1	2	Lymnaea, Planorbids, broken mussel shell
TBA03	(1044)	<5>	Post Med	Backfill of tanning pit	1	1	one small gastropod
TBB03	(1475)	<1>	Post Med	Fill of slot [1476]	2	1	Lymnaea, Planorbids, Valvata, Succinea, small bivalves
	(1825)	<62>	Post Med	Primary fill of N-S ditch cut	4	3	Lymnaea, Succinea, Planorbids, Valvata
	(1919)	<66>	Post Med	Fill of linear ditch	-	-	three cockles, piece of oyster shell
	(1823)	<55>	Post Med	Top fill of N-S ditch	-	-	one oyster valve and broken oyster shell
	(1866)	<63>	Post Med	Primary fill of e-w slot	1	1	Lymnaea, Succinea
	(1864)	<58>	Post Med	Primary slot of linear slot	2	2	Lymnaea, Planorbids, Valvata
	(1877)	<60>	Post Med	Waterlain fill of linear slot	2	3	Lymnaea, Planorbids, Valvata, small bivalves
	(1874)	<59>	Post Med	Fill of e-w slot	4	3	Lymnaea, Planorbids, small bivalves
	(1835)	<54>	Post Med	Occupation layer	-	-	one oyster valve
	(1859)	<56>	Post Med	Sandy sit layer	-	-	one oyster valve, pieces of mussel shell
	(1837)	<51>	Post Med	sandy silt occupation layer	-	-	one oyster valve
	(1899)	<65>	Post Med	Fill of slot [1902]	4	3	Lymnaea, Planorbids

Key: Abundance: 1 = 1 to 10 fragments; 2 = 11 to 50 fragments; 3 = 50 to 100 fragments, 4 = >100; Preservation: 1 = poor; 2 = moderate; 3 = good, 4= excellent

Table 24: Mollusca assessment (All Site Codes)

CONCLUSIONS AND RECOMMENDATIONS

Geoarchaeology

The sediments at 169 Tower Bridge Road, recorded in the samples described above, represent two distinct periods of occupation. The prehistoric period is represented mainly in section 18. Here a prehistoric drainage ditch is overlain by a probable buried soil. A soil is present at this stratigraphic level elsewhere in the site where it contains anthropogenic material which suggests that this was an occupation horizon. It is overlain by fluvial/estuarine alluvium. Such a sequence of occupation followed by inundation has been recorded at several sites around the Horsleydown Eyot and it seems likely that these sequences are all of approximately the same age. Elsewhere the period of occupation has been dated to the Bronze Age. The prehistoric deposits at 169 Tower Bridge Road are truncated by post-medieval features and overlain by deposits of post-medieval age.

Bioarchaeology

Many of these samples contain well-preserved seeds from a range of plants and have been deposited in features where seeds might become deposited naturally from the surrounding area (such as ditches and gullies). The pits might not be so useful as they may contain back fill from an unknown source of seeds or from plants imported from abroad or locations away from the immediate area of the site. Edible fruits were observed in many samples. Some of these fruits could also have medicinal uses and some could be linked to trade (such as the import of raisins or figs). The possible allspice in sample <64> (TBB03) could be an interesting additional find but only if the identification is secured. The charred assemblage from TBB03 working surface [1839] and [1841] (sample <52>) could also provide useful information about diet.

Due to the generally poor pollen, diatom and Mollusca concentrations in the column and bulk samples no further analysis is recommended. The following samples are recommended for plant macrofossil analysis.

TWG00: sample <6> context (371); sample <3> context (311); sample <7> context (374); sample <12> context (485)

TBA03: sample <6> context (1078); sample <7> context (1082); sample <5> context (1044); sample <10> context (1102); sample <1> context (1000)

TBB03: sample <62> context (1825); sample <58> context (1864); sample <56> context (1859); sample <52> context (1838); sample <65> context (1899)

Many of the samples contained identifiable charcoal. All samples containing well-preserved identifiable charcoal fragments ('3' on the table) are starred on the table and these are recommended for further analysis:

TWG00: sample <16> context (585); sample <17> context (611); sample <6> context (371), sample <8> context (433); sample <13> context (478); sample <12> context (485); sample <14> context (556); sample <10> context (464); sample 9> context (463)

TBA03: sample <8> context (1096); sample <1> context (1000); sample 10> context (1102)

TBB03: sample <1> context (1475); sample <62> context (1825); sample <66> context (1919); sample <63> context (1866); sample <58> context (1864); sample <60> context (1877); sample <59> context (1874); sample <61> context (1867); sample <64> context (1854); sample <53> context (1830); sample <52> context (1838); sample <51> context (1837).

Further identification will give information on the types of trees used to fuel fires. Roundwood fragments are scarce so it is unlikely that these samples can add any useful information to studies of woodland management.

Several of the samples produced botanical assemblages reminiscent of the deposition of domestic refuse or cess. Further analyses of these samples - well fill, context (585), sample <16>, **TWG00**, and fill of ovoid cesspit, context (1692), sample <50>, **TBB03** could help clarify the use or disuse of the features.

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APPENDIX 15

OASIS DATA COLLECTION FORM

OASIS ID: preconst1-47260

Project details

Project name	Archaeological Investigations at 169 Tower Bridge Road
Short description of the project	<p>Archaeological work was carried out at 169 Tower Bridge Road intermittently between August 2000 and October 2004, and revealed evidence of past activity from as early as the Mesolithic period, through the later prehistoric period, with also limited evidence of a Roman presence. There was then a gap in observable activity, caused by rising water levels and the site becoming inundated. Archaeological deposits dating from the early post-medieval period up to the 20th century were recorded, the area having been reclaimed during the late medieval/early post-medieval period. The earliest features on the site are dated to the Neolithic period. Towards the southern half of the site were numerous ard marks of later Neolithic to Bronze Age date. Contemporary with these were numerous stakeholes. Two large, possible cooking pits were also observed. These features were sealed by a site-wide layer of sand, which was subsequently disturbed by later activity. A number of features were cut into the surface of the sand and represented one or more later prehistoric phases of activity. A Roman ditch was also cut along the line of a Neolithic channel and was itself recut. Following limited Roman activity, the site became inundated by rising Thames waters and thick alluvium was deposited. The site was re-occupied in the post-medieval period, following reclamation. The earliest features were associated with this. From the 18th century the site became dominated by elements of the leather industry. A number of tanning pits and associated structures were recorded across the site. In addition to the abundant evidence of industrial activity a number of other features suggested the presence of both timber framed and masonry buildings. These related to structures contemporary with both the leather industry and vinegar manufacture, which was carried out on the site from 1814 until the later 20th century.</p>
Project dates	Start: 07-08-2000 End: 07-10-2004
Previous/future work	Yes / No
Any associated project reference codes	TWG00 - Sitecode
Any associated project reference codes	TWO01 - Sitecode
Any associated project reference codes	TBI01 - Sitecode
Any associated project reference codes	TBA03 - Sitecode
Any associated	TBB03 - Sitecode

project reference
codes

Type of project	Recording project
Site status	Local Authority Designated Archaeological Area
Current Land use	Vacant Land 1 - Vacant land previously developed
Monument type	PIT Late Prehistoric
Monument type	CHANNEL Late Prehistoric
Monument type	POSTHOLE Late Prehistoric
Monument type	STAKEHOLE Late Prehistoric
Monument type	DITCH Late Prehistoric
Monument type	GULLY Late Prehistoric
Monument type	TREE THROW Late Prehistoric
Monument type	ARD MARKS Late Prehistoric
Monument type	WELL Late Prehistoric
Monument type	PIT Roman
Monument type	DITCH Roman
Monument type	POSTHOLE Post Medieval
Monument type	STAKEHOLE Post Medieval
Monument type	FLOOR Post Medieval
Monument type	DITCH Post Medieval
Monument type	PIT Post Medieval
Monument type	WALL Post Medieval
Monument type	DRAIN Post Medieval
Monument type	BARREL Post Medieval
Monument type	BEAMSLOT Post Medieval
Significant Finds	LITHICS Early Prehistoric
Significant Finds	LITHICS Late Prehistoric
Significant Finds	CERAMICS Late Bronze Age
Significant Finds	CERAMICS Roman

Significant Finds	CERAMICS Post Medieval
Significant Finds	GLASS Post Medieval
Significant Finds	BUILDING MATERIALS Roman
Significant Finds	BUILDING MATERIAL Medieval
Significant Finds	BUILDING MATERIAL Post Medieval
Significant Finds	COIN Post Medieval
Significant Finds	TIMBERS Post Medieval
Significant Finds	ANIMAL BONE Late Prehistoric
Significant Finds	ANIMAL BONE Roman
Significant Finds	ANIMAL BONE Post Medieval
Investigation type	'Open-area excavation','Watching Brief'
Prompt	Direction from Local Planning Authority - PPG16

Project location

Country	England
Site location	GREATER LONDON SOUTHWARK SOUTHWARK 169 Tower Bridge Road
Postcode	SE1 3NA
Study area	1700.00 Square metres
Site coordinates	TQ 33435 79725 51.5001915132 -0.07738364922120 51 30 00 N 000 04 38 W Point
Height OD / Depth	Min: 0.24m Max: 1.12m

Project creators

Name of Organisation	Pre-Construct Archaeology Ltd
Project brief originator	English Heritage
Project design originator	Pre-Construct Archaeology Ltd
Project director/manager	Gary Brown
Project director/manager	David Divers
Project	Jim Leary

director/manager	
Project supervisor	Cassian Hall
Project supervisor	Chris Pickard
Project supervisor	Tim Bradley
Type of sponsor/funding body	Developer
Name of sponsor/funding body	Sunlight Projects Ltd

Project archives

Physical Archive recipient	LAARC
Physical Contents	'Animal Bones','Ceramics','Environmental','Glass','Industrial','Metal','Wood','Worked stone/lithics'
Digital Archive recipient	LAARC
Digital Contents	'Animal Bones','Ceramics','Environmental','Glass','Industrial','Metal','Stratigraphic','Survey','Wood','Worked stone/lithics'
Digital Media available	'Spreadsheets','Survey','Text'
Paper Archive recipient	LAARC
Paper Contents	'Stratigraphic'
Paper Media available	'Context sheet','Correspondence','Diary','Drawing','Matrices','Photograph','Plan','Report','Section'

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	An Assessment of Archaeological Investigations at 169 Tower Bridge Road, London Borough of Southwark
Author(s)/Editor(s)	Boyer, P.
Date	2008
Issuer or publisher	Pre-Construct Archaeology Ltd.

Place of issue or
publication London

Description MAP2 Assessment Report

Entered by Peter Boyer (pboyer@pre-construct.com)

Entered on 22 August 2008

OASIS:

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